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OA/ID Number: 13683
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Folder Title:
Treasury Department Bicentennial 9/11/89 [OA 6268] [2]

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DESIGN FEATURES WHICH VARY ON GENUINE CURRENCY

Signature

Design features sometimes vary from one series year to another. The most common variance come with changes in the identity, and therefore the signature, of the Secretary of the Treasury or the Treasurer of the United States.



Old Treasury Seal

Treasury Seal

The 1963B series marked a change in note design. One dollar Federal Reserve Notes of that series year featured a re-designed Treasury seal with an English inscription replacing the Latin one. The new seal, phased in over succeeding years, appears on all notes of the 1969 series year or later.

Motto

"In God We Trust" first appeared on the \$1 Silver Certificate of the 1957 series year. It was gradually phased in thereafter on other denominations and classes and is printed on the back of all U.S. paper currency of the series year 1963 or later.



New Treasury Seal

Serial Numbers and Star Notes

Each note has its own individual serial number. When a note is mutilated in the course of manufacture, it must be replaced in the series to insure a proper count of the notes produced. To print another note with an identical serial number would be costly and time-consuming. Consequently, a "star note" is substituted. This note has a serial number which is out of sequence with the others in the series. A star is printed after the number to show that it was placed in the series as a substitute. A "star note" is also used for the 100,000,000th note in a series.

Federal Reserve Seal

Each Federal Reserve Note bears a regional seal at the left of the portrait. This seal, printed in bears the name of the issuing Federal Reserve Bank and the letter designating the Federal Reserve district in which that bank is located. On notes of the 1950 series and later, the black Federal Reserve regional seal is smaller than earlier designs and is surrounded by sharp points.

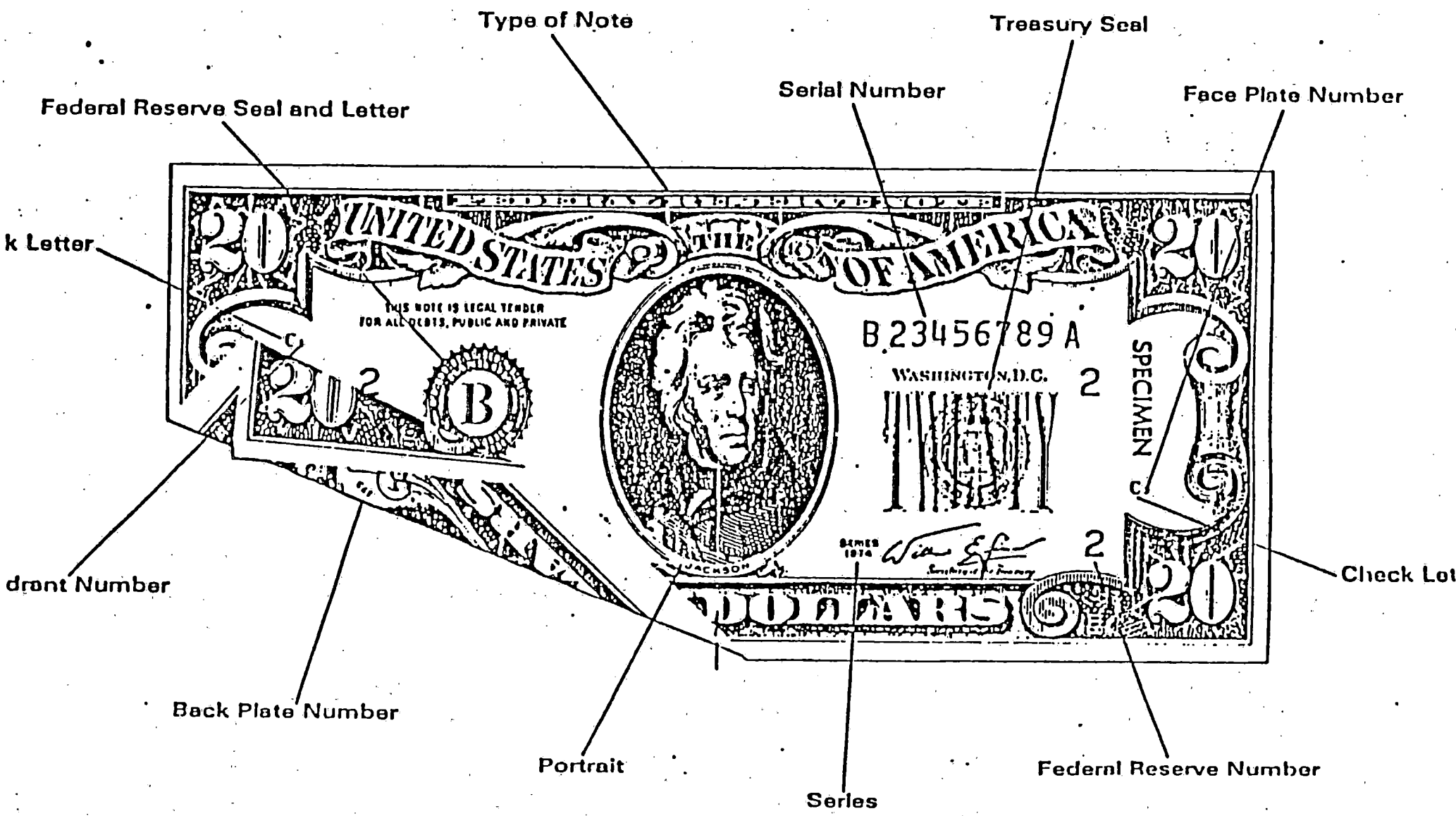
Jackson Portrait

Another commonly noticed design inconsistency occurs in the portrait of Andrew Jackson on the \$20 note. In the 1934 and 1950 series years, he is depicted with one more finger showing than on notes of other series years.

Check Letter, Face Plate Number, Back Plate Number, Quadrant Number

These designations are printed in various specific locations on the note. They are used by the Bureau of Engraving and Printing in the manufacturing process.

ations of Important Features



Want To Buy?—DON'T!

COIN WORLD - 8-5-70

Promotional Note Replicas Come From Brochures Plugging Records

By Ed Neuce

The practice of using replicas of coins and paper money as promotional items creates a king-size headache for numismatics, and it appears that nothing can be done — since the items in question are obsolete and can be legally copied.

Probably one of the most troublesome of all note replicas today, as far as Coin World staffers are concerned (it requires more letter-answering and explaining than any other single replica) is the piece issued by the Longines Symphonette Society, Larchmont, N.Y., in 1967.

The LSS replica is of a \$1,000 Bank of the United States note of the mid-1800's.

This particular piece was first reported by numismatists in the Albuquerque, N.M., area in March of 1967, but since that time Coin World has received reports from just about every state in the Union — plus several from Canada.

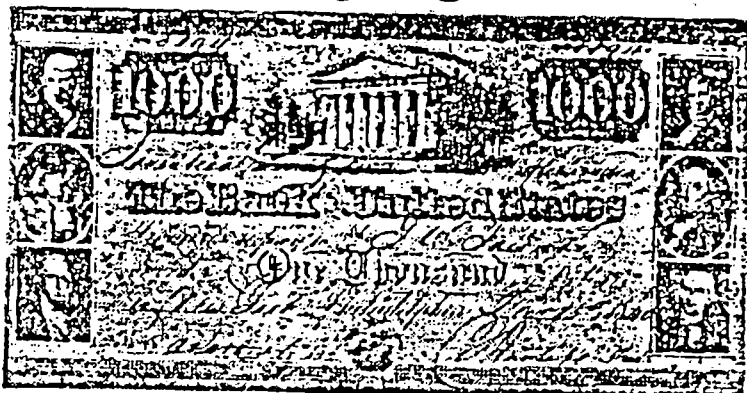
And some of the reports are nothing less than amazing. One man found his "in a trunk in the attic, a trunk that belonged to my grandfather and hadn't been opened since the turn of the century."

Another person said "my grandmother gave me the note when I was a little girl and told me to save it as one day it would be valuable."

Yet another said: "We found this old note in the family Bible that had been stored in a cedar chest for about 30 years."

Or, how about this one: "My mother was given this note by her father when he returned from the Civil War. Now, we understand it's very rare. Please advise."

Fact of the matter is, the replica notes were produced in late 1966 or early 1967 for the record firm's promotion. They were included in brochures that



Readers tempted to purchase a \$1,000 Bank of the United States note, with serial number 8894, the advice is — DON'T! See accompanying article by Coin World news editor Ed Neuce.

went far and wide — in an effort to sell records.

The replicas are printed on imitation parchment and have been treated to give them a "yellowed with age" appearance — and they all have the same serial number, 8894.

Back in 1967, when the brochures were in the mails, Coin World's associate editor, Jim Johnson, received five such brochures in his mail.

We become so used to the outlandish reports by non-numismatic newspapers concerning the replicas that we don't even bother to report them

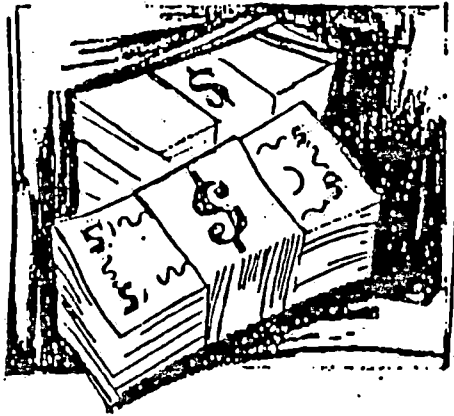
anymore. One recent story in a Canadian newspaper said one of the notes had been found by a citizen and further stated that a coin dealer had examined the note and said it was "probably worth a fortune."

If dealers and collectors can't tell a fake from a genuine, then we're in real trouble.

In conclusion, a word of caution, don't buy any Bank of the United States notes, \$1,000 denomination, with the serial number 8894 — or you may have one of those king-size headaches, too!

Bureau of Engraving and Printing

The Bureau of Engraving and Printing designs, engraves and prints for the Government; currency, bonds, notes, bills, and certificates; Federal Reserve notes; Federal Farm Loan and Federal Mortgage bonds; and revenue customs, postage and savings stamps. In addition to the work that is plate printed from engraved plates, many items such as liquor stamps are produced on surface printing presses. The Bureau also performs similar functions for the insular possessions of the United States and the Canal Zone.



The existence of the Bureau dates back to August 29, 1862, when a force of two men and four women working in a single room of the attic of the main Treasury building began to overprint the Treasury seal and signatures of the Register of the Treasury and the Treasurer of the United States on \$1 and \$2 notes which had been printed by private bank note companies under contract with the Government. An act of July 11 of that year authorizing a new issue of currency empowered the Secretary of the Treasury to have the notes or any part thereof engraved and printed at the Treasury Department in Washington, to purchase machinery and materials and to employ such personnel as was necessary for this purpose.

The following November the engraving of plates for printing currency was commenced and as the years progressed the functions performed by private contractors were gradually absorbed until the printing of all public debt securities was centralized in the Bureau, under the authority granted in the Act of March 3, 1877. This Act provided that the work of engraving and printing notes, bonds and other securities should be performed at the Treasury Department, provided it could be done there as cheaply, as perfectly, and as safely. Certain operations in connection with the printing of revenue stamps were performed in the Bureau as early as 1871. The complete printing of this work was taken over in 1878 and that of postage stamps in 1894.

The Bureau operates under a Director who is appointed by the Secretary of the Treasury. The plant and main offices of the Bureau are in Washington.

On August 4, 1950, Public Law 658 was passed by the 81st Congress, which authorized the working capital fund method of financing the operations of the Bureau, placing all operations on a completely reimbursable basis, and providing for business-type accounting and budgeting procedures. The effective date of the law was July 1, 1951, and on that date the Bureau's accounting and budgeting procedures were operating fully under the new system.

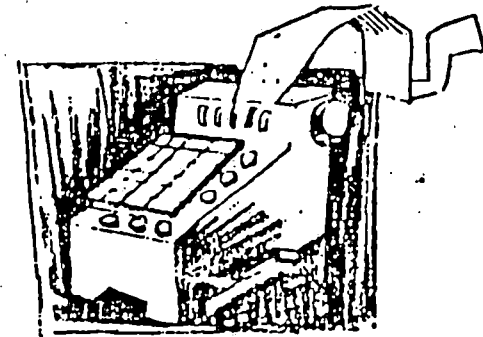
Bureau of Government Financial Operations

The Act creating the Treasury Department provided for a system of receiving, maintaining custody of, and paying out all public money; and provided for the establishment and maintenance of a system of accounts relating to receipts and expenditures of the Government. The account-keeping functions were originally carried out by the Register of the Treasury and the custodianship of public funds was lodged with the Office of the Treasurer of the United States, headed by the Treasurer. In 1920, the Office of the Commissioner of Accounts and Deposits was created and given responsibility for the account-keeping functions and the supervision of the deposit of public funds. In 1933, a presidential

executive order created the Division of Disbursement to centralize in the Treasury the disbursing operations formerly performed in the various departments and agencies.

The President's Reorganization Plan III of 1940 created a Fiscal Service within the Treasury Department, and the Bureau of Accounts, replacing the Office of the Commissioner of Accounts and Deposits, became part of the Fiscal Service, together with the Office of the Treasurer of the United States and the Division of Disbursement.

On February 1, 1974 the Secretary of the Treasury issued Treasury Department Order



No. 229 transferring the position of the Treasurer of the United States to the Office of the Secretary and merging complementary operating functions of the Bureau of Accounts and the Office of the Treasurer into a Bureau of Government Financial Operations.

The Bureau maintains the Government's central summary accounting records and prepares and publishes for the information of the President, the Congress, and the public a number of periodic and special reports on the financial operations of the Government, including cash assets and related liabilities; the status of appropriations approved by the Congress; a monthly report on receipts and expenditures which shows the surplus or deficit



DEPARTMENT OF THE TREASURY

BUREAU OF ENGRAVING AND PRINTING

WASHINGTON, D. C. 20228

Use of the National Motto "In God We Trust" on United States Currency

The national motto "In God We Trust" has never been removed from United States paper currency. This Bureau has adhered strictly to Public Law 140 of the 84th Congress, approved July 11, 1955, which provides "That at such time as new dies for the printing of currency are adopted in connection with the current program of the Treasury Department to increase the capacity of presses utilized by the Bureau of Engraving and Printing, the dies shall bear, at such place or places thereon as the Secretary of the Treasury may determine to be appropriate, the inscription "In God We Trust" and thereafter this inscription shall appear on all United States currency and coins."

As a part of a comprehensive program of modernization in this Bureau, new high-speed rotary intaglio printing presses were successfully developed and installed in 1957 for printing currency by the dry intaglio process, 32 notes to the sheet. One dollar silver certificates were the first denomination to be printed on these new high-speed presses and to bear the national motto in the back design as new dies were adopted in accordance with Public Law 140. These silver certificates were designated series 1957 and were placed into circulation on October 1, 1957. The motto also appeared on \$1 silver certificates of the 1957A and 1957B series.

All United States paper currency is printed by an intaglio process from engraved plates. In order to give the motto the prominence it deserves, it has to be engraved into the printing plate as a part of the basic engraved design of the currency. The series year, signatures of Treasury officials, Treasury seal, and serial numbers are overprinted by a typographic process and are not a part of the engraved design. All these overprinted characteristics of currency can be changed through simple mechanical modifications whenever necessary. The series year which appears on the face of each currency note signifies the year in which the design or method of printing was originally adopted. It does not change each calendar year. In 1935, the back design of the \$1 - silver certificate was changed to include the obverse and reverse of the Great Seal of the United States. Each time a new treasurer of the United States or a new Secretary of the Treasury is appointed, a change occurs in the alphabetical letter following the series year.

CONTINUED

One dollar silver certificates, series 1935, 1935A, 1935B, 1935C, 1935D, 1935E, 1935F, 1935G, and 1935H were all printed on the older flatbed presses, 18 notes to the sheet, by the wet intaglio process. Series 1935 through 1935D notes were printed and delivered long before Public Law 140 was approved. This law recognized that an enormous expenditure of funds would be associated with the immediate replacement of costly printing plates and conversion to the use of the motto on currency was allowed to proceed on a gradual basis. Accordingly, the motto will not be found on series 1935E and 1935F \$1 notes. By September 1961 the motto had been added to the back designs of the series 1935G. Some of the early printings of series 1935G do not bear the motto. The national motto appears on all \$1 silver certificates, series 1935H.

Subject to a kind of disease, which at that time they called lack of money.

p157:14 (Francois Rabelais)

Certainly there are lots of things in life that money won't buy, but it's very funny - Have you ever ~~the~~ tried to buy them without money?

p855 (Ogden Nash)
N 14

The holy passion of Friendship is of so sweet and steady and loyal and enduring a nature that it will ~~be~~ last through a whole lifetime, if not asked to lend money.

(p624:17 Twain)

Gives me some kind of content to remember how painful it is sometimes to keep money, as well as to get it.

(p310:13 Samuel Pepys)

Lack of money is the root of all evil
(p680:2 George Bernard Shaw)

There is nothing so degrading as the constant anxiety about one's means of livelihood.

... money is like a sixth sense without which you cannot make complete use of the other five.

(p751:11 William Somerset Maugham)

I know of no country, indeed, where the love of money has taken stronger hold on the affections of men and where a profounder contempt is expressed for the theory of permanent equality of property.

(p506:2 Alexis de Tocqueville)

To Pear

Date 8/14 Time 3:25

WHILE YOU WERE OUT

M Cheryl Crispen

of Dept of Treasury

Phone 566-5252

Area Code

Number

Extension

TELEPHONED	☐	PLEASE CALL	☐
CALLED TO SEE YOU	☐	WILL CALL AGAIN	☐
WANTS TO SEE YOU	☐	URGENT	☐

RETURNED YOUR CALL ☐

Message _____

Re: Bicentennial

Operator



AMPAD
EFFICIENCY®

23-020

THE WHITE HOUSE
WASHINGTON

foreign coins
certificates of exchange
tobacco,

Curtis P. Nettles

Money Supply of
Am Colonies before
1720
(1964)

Secretary of the Treasury

Alexander Hamilton 1789-1795	Walter Q. Gresham 1884
Oliver Wolcott, Jr. 1795-1800	Hugh McCulloch 1884-1885
Samuel Dexter 1801	Daniel Manning 1885-1887
Albert Gallatin 1801-1814	Charles S. Fairchild 1887-1889
George W. Campbell 1814	William Windom 1889-1891
Alexander J. Dallas 1814-1816	Charles Foster 1891-1893
William H. Crawford 1816-1825	John G. Carlisle 1893-1897
Richard Rush 1825-1829	Lyman J. Gage 1897-1902
Samuel D. Ingham 1829-1831	Leslie M. Shaw 1902-1907
Louis McLane 1831-1833	George B. Cortelyou 1907-1909
William J. Duane 1833	Franklin McVeagh 1909-1913
Roger B. Taney 1833-1834	William G. McAdoo 1913-1918
Levi Woodbury 1834-1841	Carter Glass 1918-1920
Thomas Ewing 1841	David F. Houston 1920-1921
Walter Forward 1841-1843	Andrew W. Mellon 1921-1932
John C. Spencer 1843-1844	Ogden L. Mills 1932-1933
George M. Bibb 1844-1845	William H. Woodin 1933
Robert J. Walker 1845-1849	Henry Morgenthau, Jr. 1934-1945
William M. Meredith 1849-1850	Frederick M. Vinson 1945-1946
Thomas Corwin 1850-1853	John W. Snyder 1946-1953
James Guthrie 1853-1857	George M. Humphrey 1953-1957
Howell Cobb 1857-1860	Robert B. Anderson 1957-1961
Phillip F. Thomas 1860-1861	C. Douglas Dillon 1961-1965
John A. Dix 1861	Henry H. Fowler 1965-1968
Salmon P. Chase 1861-1864	Joseph W. Barr 1968-1969
William P. Fessenden 1864-1865	David M. Kennedy 1969-1971
Hugh McCulloch 1865-1869	John B. Connally 1971-1973
George S. Boutwell 1869-1873	George P. Shultz 1972-1974
William A. Richardson 1873-1874	William E. Simon 1974-1977
Benjamin H. Bristow 1874-1876	W. Michael Blumenthal 1977-1979
Lot M. Morrill 1876-1877	G. William Miller 1979-1981
John Sherman 1877-1881	Donald T. Regan 1981-1985
William Windom 1881	James A. Baker, III 1985-
Charles J. Folger 1881-1884	

Secretary of War

Henry Knox 1789-1795	James McHenry 1796-1800
Timothy Pickens 1795	Samuel Dexter 1800



DEPARTMENT OF THE TREASURY

Department of the Treasury



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On the cover:

Thirty columns, each 36 feet high and carved in the Ionic order from a single block of granite, form the east facade of the Main Treasury Building in Washington, D.C. The colonnade is 336 feet long and constitutes one of the most dramatic examples of American federal architecture. (U.S. Treasury)

Department of the Treasury
Washington, D.C., 1986



The cast-iron column capitals in the South, West, and North wings are unique to Treasury. They combine elements of Ionic and Corinthian orders of architecture with federal iconography (the gilded eagle and the hand holding a gilded Treasury key).

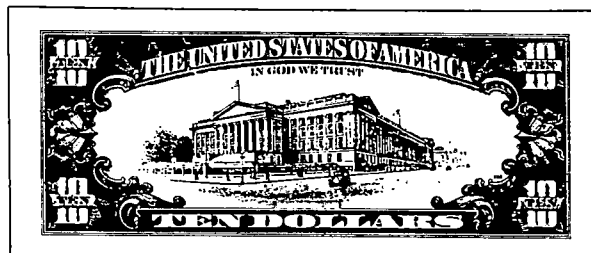


INTRODUCTION

The management of the money resources of the United States has always been the primary function of the Department of the Treasury. Whether it is regulating national banks, determining international economic policy, collecting income taxes or customs duties, reporting the government's daily financial transactions, or manufacturing coins or bills for circulation, the one concern that still ties together the activities of the Department of the Treasury is money.

Though formally established as an executive department by the First Session of Congress in 1789, many functions of the Department of the Treasury were being carried out even before the signing of the Declaration of Independence thirteen years earlier. Over the decades, the functions of the Department have expanded and grown more sophisticated to meet the needs of a developing nation.

Today, the Department of the Treasury remains the premier financial institution of the United States with a full-time agenda of accounting, revenue collection, money production, and economic policy formulation. In addition to its traditional responsibilities, Treasury performs such diverse government functions as providing security protection for the President, striking commemorative medals, monitoring the sale of guns and explosives, and training law enforcement personnel from over 60 Federal organizations.



The Treasury Building in Washington, D.C., is featured on the reverse of the \$10 bill. All United States currency and coinage are produced by the Department of the Treasury. (U.S. Treasury)



HISTORY

Revolutionary Period

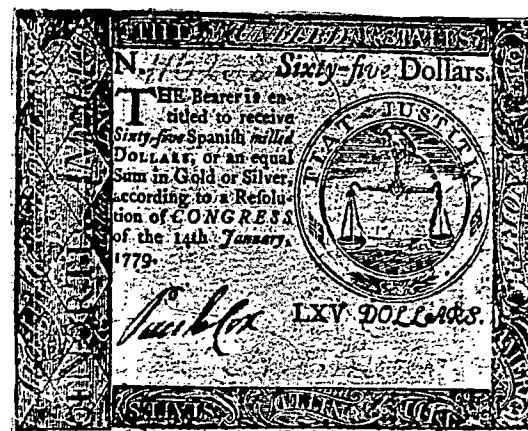
The history of the Department of the Treasury began in the turmoil of the American Revolution, when the Continental Congress at Philadelphia deliberated the crucial issue of financing a war of independence against Great Britain. The Congress had no power to levy and collect taxes, nor was there a tangible basis for securing funds from foreign investors or governments. The delegates resolved to issue paper money in the form of bills of credit, promising redemption in coin on faith in the revolutionary cause. On July 23, 1775—only a few days after the Battle of Bunker Hill—three men were appointed to supervise the printing of \$2 million in bills; 28 citizens of Philadelphia were employed by the Congress to sign and number the currency.

On July 29, 1775, the Second Continental Congress assigned the responsibility for the management of the revolutionary government's finances to Joint Treasurers, George Clymer and Michael Hillegas. The Congress stipulated that each of the colonies contribute to the Continental government's funds and issued another \$2 million in bills of credit in December of that year.

To ensure proper and efficient handling of the growing national debt in the face of weak economic and political ties between the colonies, the Congress designated in February, 1776, a committee of five to superintend the Treasury, estimate its accounts, and report periodically to the Congress. On April 1, an office of accounts and an



(Left) Michael Hillegas, first Treasurer of the United States, 1775-89. (Right) Robert Morris, Superintendent of Finance, 1781-84. (Treasury Collection)



This \$65 Continental note was issued January 14, 1779. The Revolutionary money was printed in various denominations and signed by hand. (Smithsonian Institution)

auditor general were established within the Treasury Office to facilitate the settlement of all payments and claims for the government of the "United Colonies." With the signing of the Declaration of Independence on July 4, 1776, the newborn republic as a sovereign nation was able to secure loans from abroad.

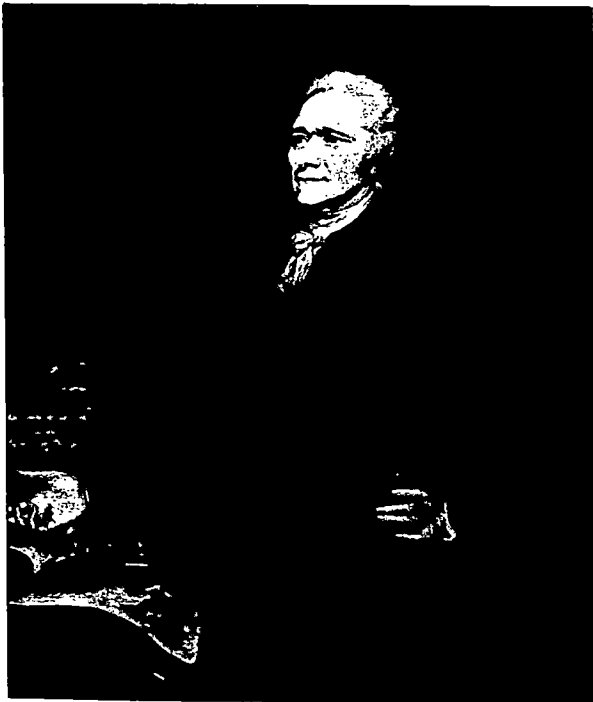
Despite the infusion of foreign and domestic loans to pay for a war of independence, the united colonies were unable to establish a well-organized agency for financial administration. Michael Hillegas was designated Treasurer of the United States on September 6, 1777, but over the next three years, the Treasury Office was reorganized three times and the paper Continental Dollar devalued rapidly. By May, 1781, it collapsed at a rate of 525 to 1 against hard currency. Protests against the worthless money swept the colonies and angry Americans coined the expression "not worth a Continental."

Robert Morris was designated Superintendent of Finance in 1781 and restored stability to the nation's finances. Morris, a wealthy colonial merchant, was nicknamed "the Financier" because of his reputation for procuring funds or goods on a moment's notice. His staff included a Comptroller, a Treasurer, a Register, and various clerks, who managed the country's finances through 1784, when Morris resigned because of ill health. Until the Constitution of the United States was ratified in 1789, a board of three Commissioners continued to oversee the finances of the confederation of former colonies.

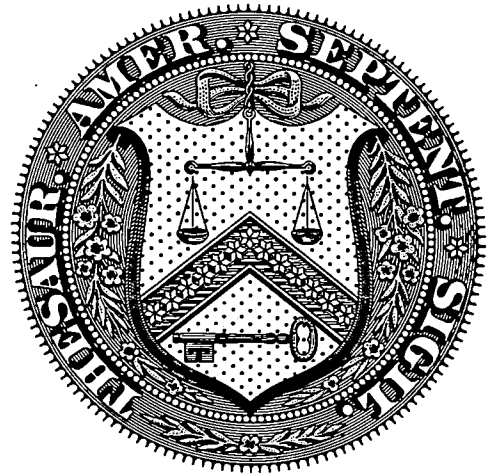
Hamilton and the Establishment of the Department of the Treasury

The First Congress of the United States convened in New York on March 4, 1789, marking the beginning of government under the Constitution. On September 2, 1789, Congress created a permanent institution for the management of government finances:

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, that there shall be a Department of the Treasury, in which shall be the following officers, namely: A Secretary of the Treasury, to be deemed head of the Department; a Comptroller, an Auditor, a Treasurer, a Register, and an Assistant to the Secretary, which assistant shall be appointed by said Secretary.



Alexander Hamilton served as the first Secretary of the Treasury from 1789 to 1795. One of the most brilliant statesmen of the early American republic, he was killed in a duel in 1804.
(Treasury Collection)



*The original Seal of the Department of the Treasury, designed in 1778. The Latin inscription is an abbreviation for the phrase *Thesauri Americae Septentrionalis Sigillum*, which means "The Seal of the Treasury of North America." The seal was simplified in 1968 and now bears the words "The Department of the Treasury" and the date of the Department's establishment, 1789. (U.S. Treasury)*

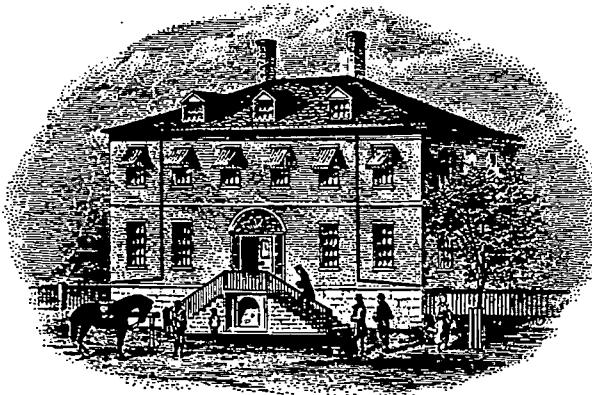
Alexander Hamilton took the oath of office as the first Secretary of the Treasury on September 11, 1789. Hamilton had served as George Washington's aide-de-camp during the Revolution, and had since then been a successful lawyer in New York. Because of his financial and managerial acumen, Hamilton was a logical choice for solving the problem of the new nation's heavy war debt.

Hamilton's first official act was to submit a report to Congress in which he laid the foundation for the nation's financial health. To the surprise of many legislators, he insisted upon federal assumption and dollar-for-dollar repayment of the country's war debt of \$75 million in order to revitalize the public credit: "The debt of the United States... was the price of liberty... The faith of America was pledged for it, and with solemnities that give peculiar force to the obligation." Hamilton foresaw the development of industry and trade in the United States, and suggested that government revenues be based upon customs duties. His sound financial policies also inspired investment in the Bank of the United States, which issued money in the government's name.

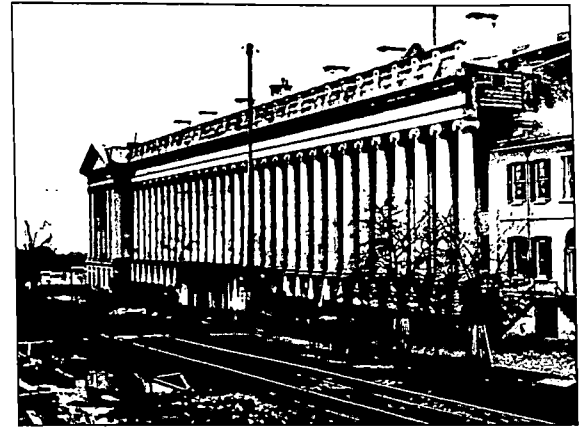
The Treasury Building

In the first years of the American republic's existence, the government was quartered in Philadelphia until the new capital city as authorized in the Constitution was built on the banks of the Potomac River. In 1800, the government moved to Washington, D.C., and the Department of the Treasury moved into a porticoed Georgian-style building designed by an English architect, George Hadfield. This structure was burned by the British in 1814, but was rebuilt by White House architect James Hoban. This building was identical to three others located on lots adjacent to the White House, each housing one of the four original departments of the U.S. Government: State, War, Navy, and Treasury. The Treasury Building, to the southeast of the White House, was burned by arsonists in 1833 with only the fireproof wing left standing.

The present Treasury Building is a magnificent granite structure in the Greek Revival style; it was built over a period of 33 years between 1836 and 1869. The east and center wings, designed by Robert Mills, architect of the Washington Monument and the Patent Office Building, comprise the first part of the building constructed from 1836 to 1842. The most architecturally impressive feature of the Mills design is the east front colonnade running the length of the building. Each of the 30 columns is 36 feet tall and was carved out of a single



View of the east entrance of the first Treasury Building in Washington, 1804. The principal entrance of the building faced south. It was burned to the ground by the British in 1814 and was replaced by an identical structure which was also destroyed by fire in 1833. (U.S. Treasury)



East front of Main Treasury, circa 1865. The 336-foot long colonnade was rebuilt with granite in 1908. On the right stands the old State Department building, which was razed in 1866 to make room for the north wing of Main Treasury. (Library of Congress)

block of granite. The interior design of the east and center wings is classically austere, in keeping with the Greek Revival style.

Later additions were made to the original wings, beginning with the construction of the south wing from 1855 to 1860 and the west wing from 1855 to 1864. The preliminary design of the wings was provided by Thomas Ustick Walter, architect of the dome of the U.S. Capitol, but architects Ammi B. Young and Isaiah Rogers refined the plans, designed the interior details, and supervised construction. While the exterior of the building was executed along the lines of the original Mills wings, the interiors of the later wings reflect changes in both building technology and aesthetic tastes. Iron columns and beams reinforced the building's brick vaults; the architectural detailing became much more ornate, following mid-19th century fashion.

The final addition to the Treasury Building was the north wing, built from 1867 to 1869. Its architect was Alfred B. Mullett, who subsequently designed the State, War, and Navy Building (now the Old Executive Office Building) on the other side of the White House. Similar in construction and decor to the south and west wings, the north wing is unique as the site of the Cash Room—a two-story marble hall in which the daily financial business of the U.S. Government could be transacted. The room was opened in 1869 as the site of President Ulysses S. Grant's Inaugural Reception.



Solid granite columns are hoisted into place on the north portico of the Treasury Building, September 16, 1867. (National Archives)

The Treasury Building is the oldest departmental building in Washington and has had a great impact on the design of other government buildings. At the time of its completion, it was one of the largest office buildings in the world. It served as a barracks for soldiers during the Civil War and as the temporary White House for President Andrew Johnson following the assassination of President Lincoln in 1865. The Treasury Building is unquestionably a monument of continuing architectural and historic significance.

The Development of the Department

Throughout the decades of American history, the Department of the Treasury has been a dynamic aspect of the government's service to the people, expanding and developing to accommodate the nation's needs. While the fiscal and collection functions have remained substantially constant over almost two centuries, other incidental operations have varied greatly. Most of the functions assigned to Treasury by the initiating legislation are still carried out by the Departmental offices, although the functions of the Comptroller have been assumed by the Comptroller General of the General Accounting Office, and those of the Register are carried out by the Financial Management Service.

Many functions of the federal government, regardless of fiscal significance, were first placed

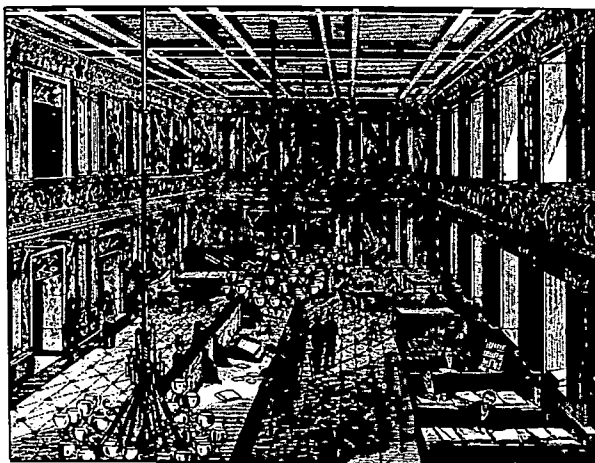


Following the assassination of President Lincoln in 1865, Andrew Johnson used a room in the Treasury Building as a temporary office before moving into the White House. (Library of Congress)

under the jurisdiction of Treasury; other agencies or executive departments have since been created to administer some of these activities. The Postal Service, for example, was administered by Treasury until 1829; the General Land Office, which was the nucleus of the Department of the Interior, was part of Treasury from 1812 to 1849. Operations associated with business were Treasury activities until the creation of the Department of Commerce and Labor in 1903; the functions of the Office of the Supervising Architect of the Treasury were eventually established within the General Services Administration in 1949. The oldest seagoing armed service in the United States, the Coast Guard, remained in the Department of the Treasury until its transfer to the Department of Transportation in 1967, and other marine interests were administered by Treasury: the U.S. Coastal Survey, the



The Inaugural Reception of President Ulysses S. Grant took place in the Treasury Cash Room on March 4, 1869. The event was so crowded that ballgoers had to wait two hours to retrieve their wraps. (Library of Congress)



Interior of the Cash Room where government checks could be cashed as recently as 1975. The walls are made of seven varieties of American and imported marble. (Library of Congress)

Lighthouse Service, and the Marine Hospital Service, from which the Public Health Service, and ultimately, the Department of Health and Human Services grew. The Bureau of Narcotics was part of Treasury until its relocation in the Department of Justice as the Bureau of Narcotics and Dangerous Drugs. The Treasury Bureau of the Budget was transferred to the Executive Office of the President in 1939 and now oversees the spending of federal funds as the Office of Management and Budget.

Treasury is an agency that has been sculpted by the history of the nation it serves: though its basic functions as dictated in the Constitution remain constant, it has adapted to the ever-changing realities of the nation's development through periodic innovations and reorganizations. The Civil War, for example, had a great effect upon the activities of the Department of the Treasury: the loss of customs revenues from the seceded Southern states resulted in the establishment of the Bureau of Internal Revenue, as well as the printing of paper currency and the institution of the National Banking System. The growth of international trade after World War I and the United States involvement in World War II demanded an active role by the Department of the Treasury in the Bretton Woods Conference in 1944, the establishment of the World Bank, and the leadership of the United States in worldwide economic development efforts.

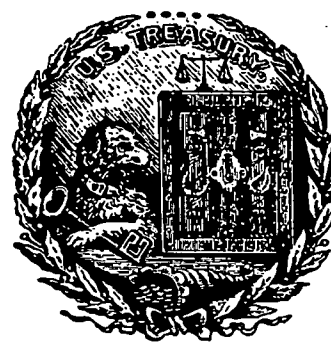


ORGANIZATION AND FUNCTIONS

The Department of the Treasury is organized into two major components: the Departmental Offices and the operating bureaus. The Departmental Offices are primarily responsible for the formulation of policy and management of the Department as a whole, while the operating bureaus carry out the specific operations assigned to the Department. The basic functions of the Department of the Treasury include:

- Economic and fiscal policy
- International and domestic economic research
- Government accounting, cash, and debt management
- Supervision of national banks
- Production of coin and currency
- Assessment and collection of internal revenue
- Enforcement of tax and tariff laws
- Anti-counterfeiting operations and Executive protection

The Departmental Offices are composed of divisions headed by Assistant Secretaries who report to the Secretary, his Deputy, or the Under Secretary for Finance. Most of these divisions are located within the Main Treasury Building in Washington, D.C. The eleven bureaus make up 98% of the Treasury work force, which totals approximately 160,000 people.



A Treasury seal, circa 1800, depicts a watchdog guarding the key to a strongbox. According to legend, the dog is "Nero," the first watchdog of the U.S. Mint in 1793. The key and scales are also incorporated in the official Treasury seal. (U.S. Treasury)

Departmental Offices

The Secretary of the Treasury is responsible for formulating and recommending domestic and international financial, economic, and tax policy; participating in the formulation of broad fiscal policies that have general significance for the economy; and managing the public debt. The Secretary oversees the activities of the Department in carrying out its major law enforcement responsibilities; in serving as the financial agent for the U.S. Government; and in manufacturing coins and currency.

As chief financial officer of the government, the Secretary serves as Chairman of the Cabinet Council on Economic Affairs and Senior Interagency Group on International Economic Policy, and as U.S. Governor of the International Monetary Fund, the International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, and the African Development Bank.

The Deputy Secretary advises and assists the Secretary in the supervision and direction of the Department and its activities, and succeeds the Secretary in his absence, sickness, or unavailability. The Deputy Secretary plays a primary role in the formulation and execution of Treasury policies and programs in all aspects of the Department's activities.

The Treasurer of the United States, the only Treasury office older than the Department itself, was established September 6, 1777. The Treasurer was originally charged with the receipt and custody of government funds, though many of these functions have been taken over by different bureaus of the Department of the Treasury. Responsibility for oversight of the Bureau of Engraving and Printing, the Mint, and the United States Savings Bonds Division was assigned to the Treasurer in 1981.

Bureaus

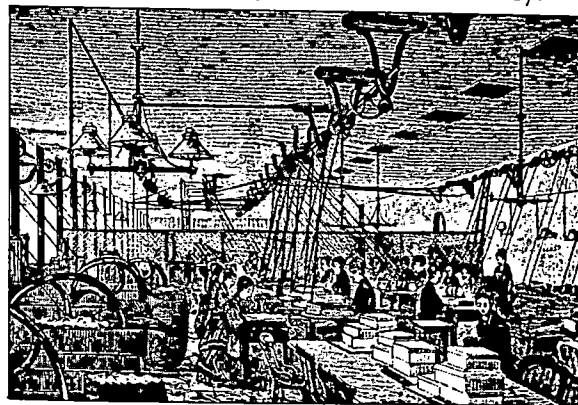
Bureau of Alcohol, Tobacco, and Firearms

The Bureau of Alcohol, Tobacco, and Firearms (ATF) was established on July 1, 1972 out of the former Alcohol Tax Unit of the Bureau of Internal Revenue. ATF enforces federal laws involving excise taxes on alcoholic substances, control of firearms and explosives, and regulation of the tobacco industry. Its authority is established under the National Firearms Act of 1934 and the Gun Control Act of 1968.

Office of the Comptroller of the Currency

The Office of the Comptroller of the Currency was established as an integral part of the National Banking System by an act of Congress on February 25, 1863. The Office has maintained its bureau status throughout its existence.

As the administrator of nationally-chartered banks, the Comptroller of the Currency oversees the execution of laws relating to national banks and promulgates rules and regulations governing the operations of approximately 4,900 national and District of Columbia banks; the Comptroller also supervises a nationwide staff of approximately 2,000 bank examiners. Charters, mergers, and establishment of branches of national banks require approval of the Comptroller of the Currency.



Workers of the Bureau of Engraving and Printing cut and separate United States paper currency in the Treasury Building. Paper money was first issued by the federal government in 1862. (Library of Congress)

A Customs agent searches a traveller suspected of smuggling. The Customs Service is the only Treasury bureau older than the Department itself. (Library of Congress)



United States Customs Service

The Customs Service was established by the Second, Third and Fifth Acts of the First U.S. Congress in 1789, making it the oldest government agency. The Department of the Treasury was established two months later, and Customs was placed within it.

The functions of the Customs Service are to assess and collect duties and taxes on imported goods, to control carriers of imports and exports, and to combat smuggling and revenue frauds. Customs agents cooperate with other government enforcement and investigative agencies in the administration and enforcement of over 400 statutory and regulatory requirements involving international trade.

Bureau of Engraving and Printing

The U.S. Government began printing money in 1862, when "greenback" currency was issued to finance the Civil War. Five clerks working in the attic of the Treasury Building affixed the Treasury Seal to the bills. The functions of the Bureau of Engraving and Printing were formally established on March 3, 1877.

The Bureau of Engraving and Printing designs, engraves and prints all U.S. paper currency; Treasury bills, notes and bonds; postage, customs, and revenue stamps; commissions, permits, and certificates of award. It is administered by the Treasurer of the United States.

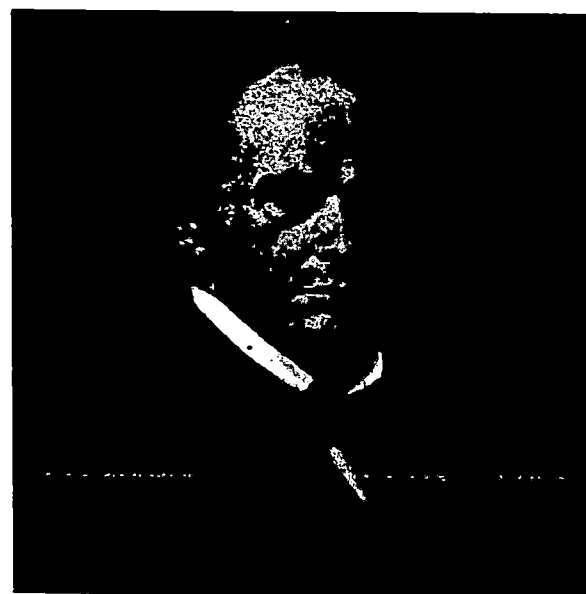
Federal Law Enforcement Training Center

On July 1, 1970, the Federal Law Enforcement Training Center (FLETC) was established for the purpose of instructing agents and officers from various governmental law enforcement agencies, including the Secret Service, Customs, and ATF, but also the Immigration and Naturalization Service and U. S. Park Police in addition to other non-Treasury agencies. The FLETC maintains its principal training facilities in Glynco, Georgia.

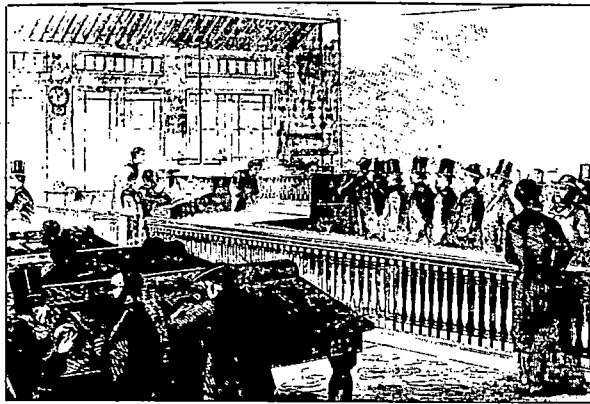
Financial Management Service

Responsible for one of the oldest and most basic functions of the Department of the Treasury, the Financial Management Service (FMS) receives and disburses all public monies, maintains government accounts, and prepares daily and monthly reports on the status of government finances.

While these functions were originally executed by the Register of the Treasury, the Office of the Commissioner of Accounts and Deposits was established in 1920, separating the account-keeping from the Office of the Secretary. The division was



Salmon P. Chase, the twenty-fifth Secretary of the Treasury, served during the Civil War from 1861 to 1864. Under Chase the Bureau of Internal Revenue was established in 1862. (U.S. Treasury)



Taxpayers queue up to pay the first national income tax in 1862, which was levied to finance the Civil War. The Internal Revenue Service is now the largest of the Treasury bureaus. (Library of Congress)

renamed the Bureau of Government Financial Operations in 1974, and became FMS in 1984. With the name change in 1984, the Service was given broader responsibilities, including lead agency roles for programs to improve cash management systems governmentwide.

Internal Revenue Service

The Internal revenue Service (IRS) is responsible for the determination, assessment, and collection of internal revenue in the United States. This revenue consists of personal and corporate income taxes, excise, estate, and gift taxes, as well as employment taxes for the nation's Social Security system.

The Bureau of Internal Revenue was established July 1, 1862, to collect new income taxes, money which was used to pay for the civil War. Although the income tax was declared unconstitutional by the Supreme Court in 1895, the national income tax was reinstated in 1913. The Bureau of Internal Revenue was responsible for enforcement of the Prohibition amendment in the 1920s.

The Bureau of Internal Revenue was reorganized in 1953, and renamed the Internal Revenue Service. It remains the largest of the Treasury bureaus, employing over 100,000 workers nationally.

United States Mint

The Mint of the United States was created by Congress on April 2, 1792, within the Department of State. The Mint was made an independent agency in 1799, and under the Coinage Act of 1873 became part of Treasury. It was placed under auspices of the Treasurer of the United States in 1981.

Mint facilities in Philadelphia, Denver, San Francisco and West Point strike all of the nation's coinage. The gold bullion reserve is protected by the Mint at the West point and Fort Knox Bullion Depositories. The Mint manages extensive commercial marketing programs. The product line includes special coin sets for collectors, national medals, American Eagle Gold and Silver Bullion Coins, and commemorative coins marking national events such as the Bicentennial of the Constitution.



As the fifty-second Secretary of the Treasury (1934-1945), Henry Morgenthau, Jr. served from after the Depression through World War II. During his tenure as Secretary of the Treasury, he served as chairman of the conference at Bretton Woods (1944) which established the International Monetary Fund and the World Bank. (U.S. Treasury)

Bureau of the Public Debt

Originally a function of the Office of the Secretary, the responsibility of managing the federal government's debt was consolidated from several divisions into the Public Debt Service in 1920; bureau status followed in 1940. The Bureau's primary

responsibilities are to administer the Treasury's debt management activities through the issuance of United States Treasury marketable securities and United States Savings Bonds, the servicing of those securities and bonds and the accounting for the resulting public debt.

United States Savings Bonds Division

The U.S. Savings Bonds Division promotes and directs the sale and holding of U.S. Savings Bonds and Notes. These activities originally were part of the War Finance Division, which was established on March 19, 1941. Predecessors of the government bond program were the Liberty Bonds in World War I and the baby Bonds of the late 1930s. The U.S. Savings Bonds Division is now administered by the Treasurer of the United States, who serves as its National Director.

United States Secret Service

The Secret Service was created in 1865 for the express purpose of stopping counterfeiting operations which had sprung up in this country following the introduction of paper currency during the Civil War. The Secret Service maintains its role as guardian of the integrity of our currency, but today



President Franklin D. Roosevelt buys the first War Savings Bond from Secretary Henry Morgenthau on March 19, 1941. (Library of Congress)

it also investigates crimes involving United States securities, coinage, other government issue, credit and debit card fraud, computer fraud, and electronic funds transfer fraud.

The most obvious of its other activities is executive protection, which began after the assassination of President McKinley in 1901. Today the Secret Service protects, among others: the President, Vice President, and members of their immediate families, the visiting head of a foreign state or government and their spouses, former Presidents and their spouses, and major presidential or vice presidential candidates.

This five-pointed badge was used by Special Agents of the United States Secret Service from 1890 to 1971. (U.S. Treasury)



Appendix I

Secretaries of the Treasury

Administration

1. Alexander Hamilton, New York
September 11, 1789—January 31, 1795 Washington
2. Oliver Wolcott, Connecticut
February 3, 1795—March 3, 1797 Washington
March 4, 1797—December 31, 1800 J. Adams
3. Samuel Dexter, Massachusetts
January 1, 1801—March 3, 1801 J. Adams
March 4, 1801—May 13, 1801 Jefferson
4. Albert Gallatin, Pennsylvania
May 14, 1801—March 3, 1809 Jefferson
March 4, 1809—February 8, 1814 Madison
5. George W. Campbell, Tennessee
February 9, 1814—October 5, 1814 Madison
6. Alexander J. Dallas, Pennsylvania
October 6, 1814—October 21, 1816 Madison
7. William H. Crawford, Georgia
October 22, 1816—March 3, 1817 Madison
March 4, 1817—March 6, 1825 Monroe
8. Richard Rush, Pennsylvania
March 7, 1825—March 5, 1829 J. Q. Adams
9. Samuel D. Ingham, Pennsylvania
March 6, 1829—June 20, 1831 Jackson
10. Louis McLane, Delaware
August 8, 1831—May 28, 1833 Jackson
11. William J. Duane, Pennsylvania
May 29, 1833—September 22, 1833 Jackson
12. Roger B. Taney, Maryland
September 23, 1833—June 25, 1834 Jackson
13. Levi Woodbury, New Hampshire
July 1, 1834—March 3, 1837 Jackson
March 4, 1837—March 3, 1841 Van Buren
14. Thomas Ewing, Ohio
March 4, 1841—April 4, 1841 W. H. Harrison
April 5, 1841—September 11, 1841 Tyler
15. Walter Forward, Pennsylvania
September 13, 1841—March 1, 1843 Tyler
16. John C. Spencer, New York
March 8, 1843—May 2, 1844 Tyler
17. George M. Bibb, Kentucky
July 4, 1844—March 4, 1845 Tyler
March 5, 1845—March 7, 1845 Polk

18. Robert J. Walker, Mississippi
March 8, 1845—March 5, 1849 Polk
19. William M. Meredith, Pennsylvania
March 8, 1849—July 9, 1850 Taylor
July 10, 1850—July 22, 1850 Fillmore
20. Thomas Corwin, Ohio
July 23, 1850—March 6, 1853 Fillmore
21. James Guthrie, Kentucky
March 7, 1853—March 6, 1857 Pierce
22. Howell Cobb, Georgia
March 7, 1857—December 8, 1860 Buchanan
23. Philip F. Thomas, Maryland
December 12, 1860—January 14, 1861 Buchanan
24. John A. Dix, New York
January 15, 1861—March 6, 1861 Buchanan
25. Salmon P. Chase, Ohio
March 7, 1861—June 30, 1864 Lincoln
26. William P. Fessenden, Maine
July 5, 1864—March 3, 1865 Lincoln
27. Hugh McCulloch, Indiana
March 9, 1865—April 15, 1865 Lincoln
April 16, 1865—March 3, 1869 A. Johnson
28. George S. Boutwell, Massachusetts
March 12, 1869—March 16, 1873 Grant
29. William A. Richardson, Massachusetts
March 17, 1873—June 3, 1874 Grant
30. Benjamin H. Bristow, Kentucky
June 4, 1874—June 20, 1876 Grant
31. Lot M. Morrill, Maine
July 7, 1876—March 3, 1877 Grant
March 4, 1877—March 9, 1877 Hayes
32. John Sherman, Ohio
March 10, 1877—March 3, 1881 Hayes
33. William Windom, Minnesota
March 8, 1881—September 19, 1881 Garfield
September 20, 1881—November 13, 1881 Arthur
34. Charles J. Folger, New York
November 14, 1881—September 4, 1884 Arthur
35. Walter Q. Gresham, Indiana
September 5, 1884—October 30, 1884 Arthur
36. Hugh McCulloch, Indiana
October 31, 1884—March 3, 1885 Arthur
March 4, 1885—March 7, 1885 Cleveland

37. Daniel Manning, New York
March 8, 1885—March 31, 1887 Cleveland
38. Charles S. Fairchild, New York
April 1, 1887—March 6, 1889 Cleveland
39. William Windom, Minnesota
March 7, 1889—January 29, 1891 B. Harrison
40. Charles Foster, Ohio
February 25, 1891—March 3, 1893 B. Harrison
March 4, 1893—March 6, 1893 Cleveland
41. John G. Carlisle, Kentucky
March 7, 1893—March 3, 1897 Cleveland
March 4, 1897—March 5, 1897 McKinley
42. Lyman J. Gage, Illinois
March 6, 1897—September 14, 1901 McKinley
September 15, 1901—January 31, 1902 T. Roosevelt
43. L. M. Shaw, Iowa
February 1, 1902—March 3, 1907 T. Roosevelt
44. George B. Cortelyou, New York
March 4, 1907—March 7, 1909 T. Roosevelt
45. Franklin MacVeagh, Illinois
March 8, 1909—March 5, 1913 Taft
46. W. G. McAdoo, New York
March 6, 1913—December 15, 1918 Wilson
47. Carter Glass, Virginia
December 16, 1918—February 1, 1920 Wilson
48. David F. Houston, Missouri
February 2, 1920—March 3, 1921 Wilson
49. Andrew W. Mellon, Pennsylvania
March 4, 1921—August 2, 1923 Harding
August 3, 1923—March 3, 1929 Coolidge
March 4, 1929—February 12, 1932 Hoover
50. Ogden L. Mills, New York
February 13, 1932—March 4, 1933 Hoover
51. William H. Woodin, New York
March 5, 1933—December 31, 1933 F. D. Roosevelt
52. Henry Morgenthau, Jr., New York
January 1, 1934—April 12, 1945 F. D. Roosevelt
April 12, 1945—July 22, 1945 Truman
53. Fred M. Vinson, Kentucky
July 23, 1945—June 23, 1946 Truman
54. John W. Snyder, Missouri
June 25, 1946—January 20, 1953 Truman

55. George M. Humphrey, Ohio
January 21, 1953—July 29, 1957 Eisenhower
56. Robert B. Anderson, Connecticut
July 29, 1957—January 20, 1961 Eisenhower
57. C. Douglas Dillon, New Jersey
January 21, 1961—November 22, 1963 Kennedy
November 22, 1963—April 1, 1965 L. B. Johnson
58. Henry H. Fowler, Virginia
April 1, 1965—December 20, 1968 L. B. Johnson
59. Joseph W. Barr, Indiana
December 21, 1968—January 20, 1969 L. B. Johnson
60. David M. Kennedy, Utah
January 22, 1969—February 10, 1971 Nixon
61. John B. Connally, Texas
February 11, 1971—June 12, 1972 Nixon
62. George P. Shultz, Illinois
June 12, 1972—May 8, 1974 Nixon
63. William E. Simon, New Jersey
May 8, 1974—August 9, 1974 Nixon
August 9, 1974—January 20, 1977 Ford
64. W. Michael Blumenthal, Michigan
January 23, 1977—August 4, 1979 Carter
65. G. William Miller, Rhode Island
August 7, 1979—January 20, 1981 Carter
66. Donald T. Regan, New Jersey
January 22, 1981—February 1, 1985 Reagan
67. James A. Baker, III, Texas
February 4, 1985—August 17, 1988 Reagan
68. Nicholas F. Brady, New York
September 15, 1988 — Reagan

Appendix II

Treasurers of the United States

Administration

1. Michael Hillegas, Pennsylvania
July 29, 1775—September 11, 1789
2. Samuel Meredith, Pennsylvania
September 11, 1789—March 3, 1797
March 4, 1797—March 3, 1801
March 4, 1801—October 31, 1801
Washington
J. Adams
Jefferson
3. Thomas T. Tucker, South Carolina
December 1, 1801—March 3, 1809
March 4, 1809—March 3, 1817
March 4, 1817—March 6, 1825
March 7, 1825—May 2, 1828
Jefferson
Madison
Monroe
J.Q. Adams
4. William Clark, Pennsylvania
June 4, 1828—March 5, 1829
March 6, 1829—May 31, 1829
J.Q. Adams
Jackson
5. John Campbell, Virginia
May 26, 1829—March 3, 1837
March 4, 1837—July 20, 1839
Jackson
Van Buren
6. William Selden, Virginia
July 22, 1839—March 3, 1841
March 4, 1841—April 4, 1841
April 5, 1841—March 4, 1845
March 5, 1845—March 5, 1849
March 6, 1849—July 9, 1850
July 10, 1850—November 23, 1850
Van Buren
W.H. Harrison
Tyler
Polk
Taylor
Fillmore
7. John Sloan, Ohio
November 27, 1850—April 6, 1852
Fillmore
8. Samuel Casey, Kentucky
April 4, 1853—March 6, 1857
March 7, 1857—December 22, 1859
Pierce
Buchanan
9. William C. Price, Missouri
February 28, 1860—March 6, 1861
March 7, 1861—March 21, 1861
Buchanan
Lincoln
10. F.E. Spinner, New York
March 16, 1861—April 15, 1865
April 16, 1865—March 3, 1869
March 4, 1869—June 30, 1875
Lincoln
A. Johnson
Grant
11. John C. New, Indiana
June 30, 1875—July 1, 1876
Grant
12. A.U. Wyman, Wisconsin
July 1, 1876—March 3, 1877
March 4, 1877—June 30, 1877
Grant
Hayes
13. James Gilfillan, Connecticut
July 1, 1877—March 3, 1881
March 4, 1881—September 19, 1881
September 20, 1881—March 31, 1883
Hayes
Garfield
Arthur
14. A.U. Wyman, Wisconsin
April 1, 1883—March 3, 1885
March 4, 1885—April 30, 1885
Arthur
Cleveland
15. Conrad N. Jordan, New York
May 1, 1885—May 23, 1887
Cleveland
16. James W. Hyatt, Connecticut
May 24, 1887—March 6, 1889
March 7, 1889—May 10, 1889
Cleveland
B. Harrison
17. J.N. Huston, Indiana
May 11, 1889—April 24, 1891
B. Harrison
18. Enos H. Nebecker, Indiana
April 25, 1891—March 3, 1893
March 4, 1893—May 31, 1893
B. Harrison
Cleveland
19. D.N. Morgan, Connecticut
June 1, 1893—March 3, 1897
March 4, 1897—June 30, 1897
Cleveland
McKinley
20. Ellis H. Roberts, New York
July 1, 1897—September 14, 1901
September 15, 1901—June 30, 1905
McKinley
T. Roosevelt
21. Charles. H. Treat, New York
July 1, 1905—March 7, 1909
March 8, 1909—October 30, 1909
T. Roosevelt
Taft
22. Lee McClung, Tennessee
November 1, 1909—November 21, 1912
Taft
23. Carmi A. Thompson, Ohio
November 22, 1912—November 21, 1912
March 6, 1913—March 31, 1913
Taft
Wilson
24. John Burke, North Dakota
April 1, 1913—January 5, 1921
Wilson
25. Frank White, North Dakota
May 2, 1921—August 2, 1923
August 3, 1923—May 1, 1928
Harding
Coolidge
26. H.T. Tate, Tennessee
May 31, 1928—January 17, 1929
Coolidge
27. W.O. Woods, Kansas
January 18, 1929—March 3, 1929
March 4, 1929—March 4, 1933
March 5, 1933—May 31, 1933
Coolidge
Hoover
F.D. Roosevelt
28. W.A. Julian, Ohio
June 1, 1933—April 12, 1945
April 12, 1945—May 29, 1949
F.D. Roosevelt
Truman
29. Georgia Neese Clark, Kansas
June 21, 1949—January 20, 1953
January 21, 1953—January 27, 1953
Truman
Eisenhower

30. Ivy Baker Priest, Utah
January 28, 1953-January 20, 1961 Eisenhower
January 21, 1961-January 29, 1961 Kennedy
31. Elizabeth Rudel Smith, California
January 30, 1961-April 13, 1962 Kennedy
32. Kathryn O'Hay Granahan, Pennsylvania
January 3, 1963-November 22, 1963
November 22, 1963-November 20, 1966 Kennedy
L. B. Johnson
33. Dorothy Andrews Elston, Delaware
May 8, 1969-September 17, 1970 Nixon

Dorothy Andrews Kabis, Delaware
September 17, 1970-July 3, 1971 Nixon
34. Romana Acosta Banuelos, California
December 17, 1971-February 14, 1974 Nixon
35. Francine Irving Neff, New Mexico
June 21, 1974-January, 1977 Ford
36. Azie Taylor Morton, Texas
September 12, 1977-January, 1981 Carter
37. Angela Marie Buchanan,
District of Columbia
March 17, 1981-July 5, 1983 Reagan
38. Katherine D. Ortega, New Mexico
September 22, 1983 Reagan



The Treasury Seal became official with Treasury Order No. 212, signed by Secretary Henry H. Fowler on January 29, 1968. The seal appears on the face of all United States paper currency.



DEPARTMENT OF THE TREASURY
WASHINGTON
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Remarks by
The Secretary of the Treasury
Nicholas F. Brady
At The Treasury Historical Association's
"Bicentennial Lecture Series"
The Cash Room
May 3, 1989

Thank you, "Joe" (Henry Fowler). Good evening guests, members and friends of the Treasury Historical Association. All of us share an appreciation of this building and the distinguished history of this Department. It is, as many of you know, the third oldest continuously occupied federal building in Washington.

A little more than a month ago, we began a public tour program here in the building. So from now on, the general public will have an opportunity to gain an appreciation for this historic building.

One of the highlights of the public tour will be a magnificent frame produced by the Bureau of Engraving and Printing in 1893. It was recently restored and unveiled earlier today as part of our Bicentennial Celebration. It now hangs in the West Lobby around the corner from this room. I encourage you to walk down there and take a look at it during the reception that will follow Paul Volcker's remarks.

The display was produced to honor the 400th anniversary of the Discovery of America. It was first exhibited at the Columbian Exposition, but it later was shipped all over the country to other fairs and shows.

My role this evening is to open officially the celebration of Treasury's Bicentennial Year. Two hundred years ago, the world's oldest Constitutional government got its start. Just this past Sunday, President George Bush travelled to New York to celebrate the 200th anniversary of George Washington's Inauguration as the first President of the United States.

Treasury's official beginning came in September of 1789, when it became the second Executive Branch agency. Our founding

fathers recognized that one of the first duties of any government is to provide a sound financial system for its citizens. The standard of leadership set by the first Secretary of the Treasury, Alexander Hamilton, still stands as the model for his successors.

Within months of its founding, the Treasury Department was by far the largest federal agency, both in numbers of staff and in its scope. Today's organization, with eleven bureaus, seems quite vast.

But in the early years many of the agencies that today provide services to the American people in other cabinet departments were situated at Treasury. Among them are the Coast Guard, the Postal Service, the Public Health Service, the Bureau of the Budget (now OMB), and the predecessor agencies of the Departments of Interior, Commerce and Labor.

We are beginning our Bicentennial celebration with a lecture series that will explore some of the themes of our history. The first lecture is taking place this evening in this room that itself is rich in history and symbolism.

Ulysses S. Grant, our 18th President, recognized this room's potential even before it was completed. He decided to have his inaugural ball, or reception as it was in this case, on March 4, 1869 in this room.

Traditionally, the evening festivities were in honor of the outgoing president and his successor. That year, the event was called a reception to avoid having to invite the unpopular ex-president, Andrew Johnson.

Two thousand invitations were sold, slightly less than the 80,000 invitations sold for President Bush's inauguration. Each ticket admitted one gentleman and two ladies.

Unfortunately, the event wasn't particularly well-planned. The lack of any kind of coat check system caused, as one headline read, "A WILD HUNT FOR OVERCOATS." Many of the guests had to wait until 4:00 a.m. to retrieve their wraps and some clever people entered the cloak room on the fourth floor through a transom above the door of an adjacent room.

Now, before I turn the microphone back to "Joe", I want to thank the Treasury Historical Association's board for the ambitious program they are planning for this year. They began with the Bicentennial Calendar that details the Department's achievements day-by-day. In addition to tonight's lecture, they have scheduled four more -- on international trade, economic growth, historic preservation, and the history of American tax policy.

Next fall, "Joe" Fowler will join several other former Secretaries in a discussion of their roles and accomplishments. And finally, in September, we're planning a gala birthday party.

Thank you all for coming this evening. It's a pleasure to see the distinguished former Chairman of the Federal Reserve Board, Paul Volcker, here at Treasury. Now, I'd like to ask "Joe" Fowler to introduce our distinguished speaker.

Department of the Treasury



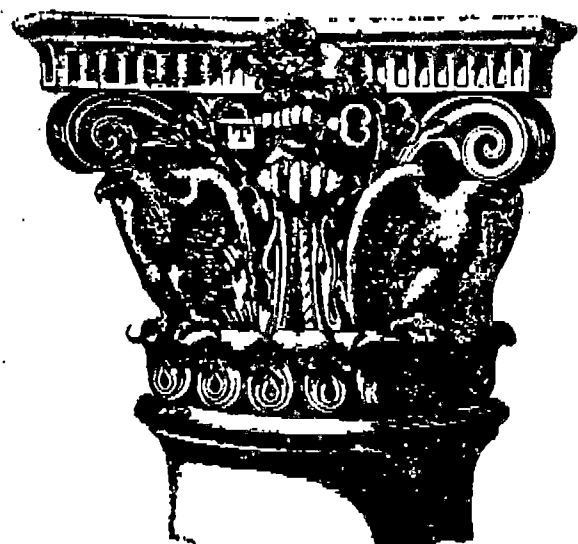
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On the cover:

Thirty columns, each 36 feet high and carved in the Ionic order from a single block of granite, form the east facade of the Main Treasury Building in Washington, D.C. The colonnade is 336 feet long and constitutes one of the most dramatic examples of American federal architecture. (U.S. Treasury)

Department of the Treasury
Washington, D.C., 1986



The cast-iron column capitals in the South, West, and North wings are unique to Treasury. They combine elements of Ionic and Corinthian orders of architecture with federal iconography (the gilded eagle and the hand holding a gilded Treasury key).



INTRODUCTION

The management of the money resources of the United States has always been the primary function of the Department of the Treasury. Whether it is regulating national banks, determining international economic policy, collecting income taxes or customs duties, reporting the government's daily financial transactions, or manufacturing coins or bills for circulation, the one concern that still ties together the activities of the Department of the Treasury is money.

Though formally established as an executive department by the First Session of Congress in 1789, many functions of the Department of the Treasury were being carried out even before the signing of the Declaration of Independence thirteen years earlier. Over the decades, the functions of the Department have expanded and grown more sophisticated to meet the needs of a developing nation.

Today, the Department of the Treasury remains the premier financial institution of the United States with a full-time agenda of accounting, revenue collection, money production, and economic policy formulation. In addition to its traditional responsibilities, Treasury performs such diverse government functions as providing security protection for the President, striking commemorative medals, monitoring the sale of guns and explosives, and training law enforcement personnel from over 60 Federal organizations.



The Treasury Building in Washington, D.C., is featured on the reverse of the \$10 bill. All United States currency and coinage are produced by the Department of the Treasury. (U.S. Treasury)



HISTORY

Revolutionary Period

The history of the Department of the Treasury began in the turmoil of the American Revolution, when the Continental Congress at Philadelphia deliberated the crucial issue of financing a war of independence against Great Britain. The Congress had no power to levy and collect taxes, nor was there a tangible basis for securing funds from foreign investors or governments. The delegates resolved to issue paper money in the form of bills of credit, promising redemption in coin on faith in the revolutionary cause. On July 23, 1775—only a few days after the Battle of Bunker Hill—three men were appointed to supervise the printing of \$2 million in bills; 28 citizens of Philadelphia were employed by the Congress to sign and number the currency.

On July 29, 1775, the Second Continental Congress assigned the responsibility for the management of the revolutionary government's finances to Joint Treasurers, George Clymer and Michael Hillegas. The Congress stipulated that each of the colonies contribute to the Continental government's funds and issued another \$2 million in bills of credit in December of that year.

To ensure proper and efficient handling of the growing national debt in the face of weak economic and political ties between the colonies, the Congress designated in February, 1776, a committee of five to superintend the Treasury, estimate its accounts, and report periodically to the Congress. On April 1, an office of accounts and an



(Left) Michael Hillegas, first Treasurer of the United States, 1775-89. (Right) Robert Morris, Superintendent of Finance, 1781-84. (Treasury Collection)



This \$65 Continental note was issued January 14, 1779. The Revolutionary money was printed in various denominations and signed by hand. (Smithsonian Institution)

auditor general were established within the Treasury Office to facilitate the settlement of all payments and claims for the government of the "United Colonies." With the signing of the Declaration of Independence on July 4, 1776, the newborn republic as a sovereign nation was able to secure loans from abroad.

Despite the infusion of foreign and domestic loans to pay for a war of independence, the united colonies were unable to establish a well-organized agency for financial administration. Michael Hillegas was designated Treasurer of the United States on September 6, 1777, but over the next three years, the Treasury Office was reorganized three times and the paper Continental Dollar devalued rapidly. By May, 1781, it collapsed at a rate of 525 to 1 against hard currency. Protests against the worthless money swept the colonies and angry Americans coined the expression "not worth a Continental."

Robert Morris was designated Superintendent of Finance in 1781 and restored stability to the nation's finances. Morris, a wealthy colonial merchant, was nicknamed "the Financier" because of his reputation for procuring funds or goods on a moment's notice. His staff included a Comptroller, a Treasurer, a Register, and various clerks, who managed the country's finances through 1784, when Morris resigned because of ill health. Until the Constitution of the United States was ratified in 1789, a board of three Commissioners continued to oversee the finances of the confederation of former colonies.

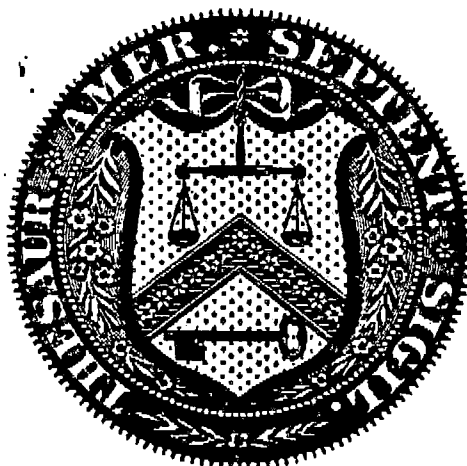
Hamilton and the Establishment of the Department of the Treasury

The First Congress of the United States convened in New York on March 4, 1789, marking the beginning of government under the Constitution. On September 2, 1789, Congress created a permanent institution for the management of government finances:

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, that there shall be a Department of the Treasury, in which shall be the following officers, namely: A Secretary of the Treasury, to be deemed head of the Department; a Comptroller, an Auditor, a Treasurer, a Register, and an Assistant to the Secretary, which assistant shall be appointed by said Secretary.



Alexander Hamilton served as the first Secretary of the Treasury from 1789 to 1795. One of the most brilliant statesmen of the early American republic, he was killed in a duel in 1804. (Treasury Collection)



*The original Seal of the Department of the Treasury, designed in 1778. The Latin inscription is an abbreviation for the phrase *Thesauri Americae Septentrionalis Sigillum*, which means "The Seal of the Treasury of North America." The seal was simplified in 1968 and now bears the words "The Department of the Treasury" and the date of the Department's establishment, 1789. (U.S. Treasury)*

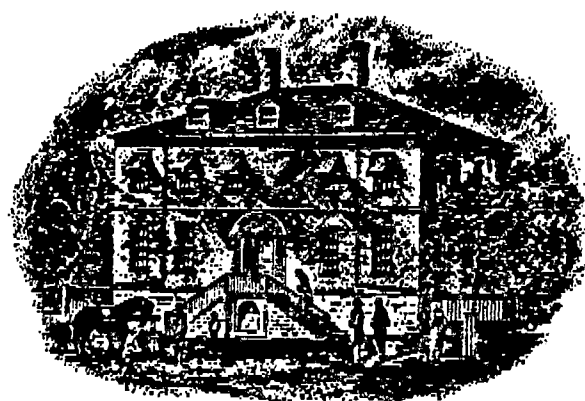
Alexander Hamilton took the oath of office as the first Secretary of the Treasury on September 11, 1789. Hamilton had served as George Washington's aide-de-camp during the Revolution, and had since then been a successful lawyer in New York. Because of his financial and managerial acumen, Hamilton was a logical choice for solving the problem of the new nation's heavy war debt.

Hamilton's first official act was to submit a report to Congress in which he laid the foundation for the nation's financial health. To the surprise of many legislators, he insisted upon federal assumption and dollar-for-dollar repayment of the country's war debt of \$75 million in order to revitalize the public credit: "The debt of the United States... was the price of liberty... The faith of America was pledged for it, and with solemnities that give peculiar force to the obligation." Hamilton foresaw the development of industry and trade in the United States, and suggested that government revenues be based upon customs duties. His sound financial policies also inspired investment in the Bank of the United States, which issued money in the government's name.

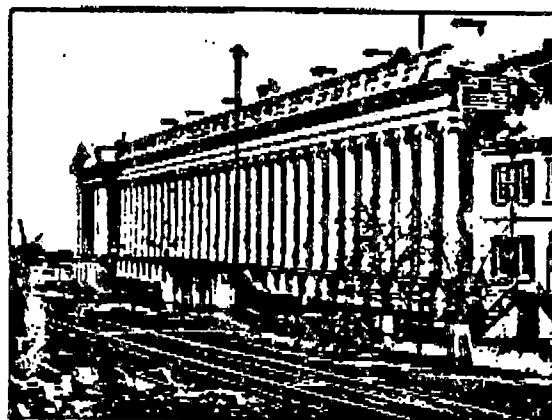
The Treasury Building

In the first years of the American republic's existence, the government was quartered in Philadelphia until the new capital city as authorized in the Constitution was built on the banks of the Potomac River. In 1800, the government moved to Washington, D.C., and the Department of the Treasury moved into a porticoed Georgian-style building designed by an English architect, George Hadfield. This structure was burned by the British in 1814, but was rebuilt by White House architect James Hoban. This building was identical to three others located on lots adjacent to the White House, each housing one of the four original departments of the U.S. Government: State, War, Navy, and Treasury. The Treasury Building, to the southeast of the White House, was burned by arsonists in 1833 with only the fireproof wing left standing.

The present Treasury Building is a magnificent granite structure in the Greek Revival style; it was built over a period of 33 years between 1836 and 1869. The east and center wings, designed by Robert Mills, architect of the Washington Monument and the Patent Office Building, comprise the first part of the building constructed from 1836 to 1842. The most architecturally impressive feature of the Mills design is the east front colonnade running the length of the building. Each of the 30 columns is 36 feet tall and was carved out of a single



View of the east entrance of the first Treasury Building in Washington, 1804. The principal entrance of the building faced south. It was burned to the ground by the British in 1814 and was replaced by an identical structure which was also destroyed by fire in 1833. (U.S. Treasury)



East front of Main Treasury, circa 1865. The 336-foot long colonnade was rebuilt with granite in 1908. On the right stands the old State Department building, which was razed in 1866 to make room for the north wing of Main Treasury. (Library of Congress)

block of granite. The interior design of the east and center wings is classically austere, in keeping with the Greek Revival style.

Later additions were made to the original wings, beginning with the construction of the south wing from 1855 to 1860 and the west wing from 1855 to 1864. The preliminary design of the wings was provided by Thomas Ustick Walter, architect of the dome of the U.S. Capitol, but architects Ammi B. Young and Isaiah Rogers refined the plans, designed the interior details, and supervised construction. While the exterior of the building was executed along the lines of the original Mills wings, the interiors of the later wings reflect changes in both building technology and aesthetic tastes. Iron columns and beams reinforced the building's brick vaults; the architectural detailing became much more ornate, following mid-19th century fashion.

The final addition to the Treasury Building was the north wing, built from 1867 to 1869. Its architect was Alfred B. Mullett, who subsequently designed the State, War, and Navy Building (now the Old Executive Office Building) on the other side of the White House. Similar in construction and decor to the south and west wings, the north wing is unique as the site of the Cash Room—a two-story marble hall in which the daily financial business of the U.S. Government could be transacted. The room was opened in 1869 as the site of President Ulysses S. Grant's Inaugural Reception.



Solid granite columns are hoisted into place on the north portico of the Treasury Building, September 16, 1867. (National Archives)

The Treasury Building is the oldest departmental building in Washington and has had a great impact on the design of other government buildings. At the time of its completion, it was one of the largest office buildings in the world. It served as a barracks for soldiers during the Civil War and as the temporary White House for President Andrew Johnson following the assassination of President Lincoln in 1865. The Treasury Building is unquestionably a monument of continuing architectural and historic significance.

The Development of the Department

Throughout the decades of American history, the Department of the Treasury has been a dynamic aspect of the government's service to the people, expanding and developing to accommodate the nation's needs. While the fiscal and collection functions have remained substantially constant over almost two centuries, other incidental operations have varied greatly. Most of the functions assigned to Treasury by the initiating legislation are still carried out by the Departmental offices, although the functions of the Comptroller have been assumed by the Comptroller General of the General Accounting Office, and those of the Register are carried out by the Financial Management Service.

Many functions of the federal government, regardless of fiscal significance, were first placed

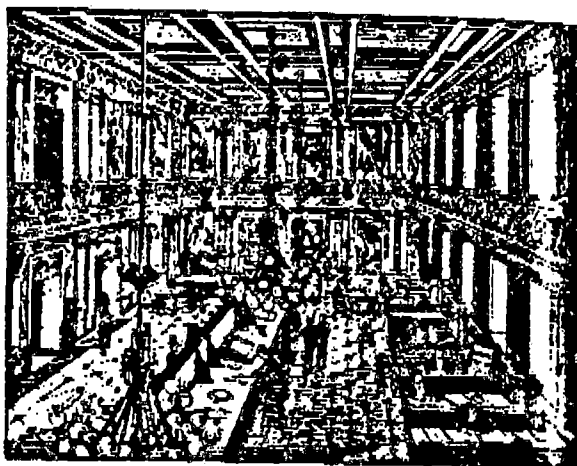


Following the assassination of President Lincoln in 1865, Andrew Johnson used a room in the Treasury Building as a temporary office before moving into the White House. (Library of Congress)

under the jurisdiction of Treasury; other agencies or executive departments have since been created to administer some of these activities. The Postal Service, for example, was administered by Treasury until 1829; the General Land Office, which was the nucleus of the Department of the Interior, was part of Treasury, from 1812 to 1849. Operations associated with business were Treasury activities until the creation of the Department of Commerce and Labor in 1903; the functions of the Office of the Supervising Architect of the Treasury were eventually established within the General Services Administration in 1949. The oldest seagoing armed service in the United States, the Coast Guard, remained in the Department of the Treasury until its transfer to the Department of Transportation in 1967, and other marine interests were administered by Treasury: the U.S. Coastal Survey, the



The Inaugural Reception of President Ulysses S. Grant took place in the Treasury Cash Room on March 4, 1869. The event was so crowded that belligerents had to wait two hours to retrieve their umbrellas. (Library of Congress)



Interior of the Cash Room where government checks could be cashed as recently as 1975. The walls are made of seven varieties of American and imported marble. (Library of Congress)

Lighthouse Service, and the Marine Hospital Service, from which the Public Health Service, and ultimately, the Department of Health and Human Services grew. The Bureau of Narcotics was part of Treasury until its relocation in the Department of Justice as the Bureau of Narcotics and Dangerous Drugs. The Treasury Bureau of the Budget was transferred to the Executive Office of the President in 1939 and now oversees the spending of federal funds as the Office of Management and Budget.

Treasury is an agency that has been sculpted by the history of the nation it serves: though its basic functions as dictated in the Constitution remain constant, it has adapted to the ever-changing realities of the nation's development through periodic innovations and reorganizations. The Civil War, for example, had a great effect upon the activities of the Department of the Treasury: the loss of customs revenues from the seceded Southern states resulted in the establishment of the Bureau of Internal Revenue, as well as the printing of paper currency and the institution of the National Banking System. The growth of international trade after World War I and the United States involvement in World War II demanded an active role by the Department of the Treasury in the Bretton Woods Conference in 1944, the establishment of the World Bank, and the leadership of the United States in worldwide economic development efforts.



ORGANIZATION AND FUNCTIONS

The Department of the Treasury is organized into two major components: the Departmental Offices and the operating bureaus. The Departmental Offices are primarily responsible for the formulation of policy and management of the Department as a whole, while the operating bureaus carry out the specific operations assigned to the Department. The basic functions of the Department of the Treasury include:

- Economic and fiscal policy
- International and domestic economic research
- Government accounting, cash, and debt management
- Supervision of national banks
- Production of coin and currency
- Assessment and collection of internal revenue
- Enforcement of tax and tariff laws
- Anti-counterfeiting operations and Executive protection

The Departmental Offices are composed of divisions headed by Assistant Secretaries who report to the Secretary, his Deputy, or the Under Secretary for Finance. Most of these divisions are located within the Main Treasury Building in Washington, D.C. The eleven bureaus make up 98% of the Treasury work force, which totals approximately 160,000 people.



A Treasury seal, circa 1800, depicts a watchdog guarding the key to a strongbox. According to legend, the dog is "Nero," the first watchdog of the U.S. Mint in 1793. The key and scales are also incorporated in the official Treasury seal. (U.S. Treasury)

Departmental Offices

The Secretary of the Treasury is responsible for formulating and recommending domestic and international financial, economic, and tax policy; participating in the formulation of broad fiscal policies that have general significance for the economy; and managing the public debt. The Secretary oversees the activities of the Department in carrying out its major law enforcement responsibilities; in serving as the financial agent for the U.S. Government; and in manufacturing coins and currency.

As chief financial officer of the government, the Secretary serves as Chairman of the Cabinet Council on Economic Affairs and Senior Interagency Group on International Economic Policy, and as U.S. Governor of the International Monetary Fund. The International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, and the African Development Bank.

The Deputy Secretary advises and assists the Secretary in the supervision and direction of the Department and its activities, and succeeds the Secretary in his absence, sickness, or unavailability. The Deputy Secretary plays a primary role in the formulation and execution of Treasury policies and programs in all aspects of the Department's activities.

The Treasurer of the United States, the only Treasury office older than the Department itself, was established September 6, 1777. The Treasurer was originally charged with the receipt and custody of government funds, though many of these functions have been taken over by different bureaus of the Department of the Treasury. Responsibility for oversight of the Bureau of Engraving and Printing, the Mint, and the United States Savings Bonds Division was assigned to the Treasurer in 1981.

Bureaus

Bureau of Alcohol, Tobacco, and Firearms

The Bureau of Alcohol, Tobacco, and Firearms (ATF) was established on July 1, 1972 out of the former Alcohol Tax Unit of the Bureau of Internal Revenue. ATF enforces federal laws involving excise taxes on alcoholic substances, control of firearms and explosives, and regulation of the tobacco industry. Its authority is established under the National Firearms Act of 1934 and the Gun Control Act of 1968.

Office of the Comptroller of the Currency

The Office of the Comptroller of the Currency was established as an integral part of the National Banking System by an act of Congress on February 25, 1863. The Office has maintained its bureau status throughout its existence.

As the administrator of nationally-chartered banks, the Comptroller of the Currency oversees the execution of laws relating to national banks and promulgates rules and regulations governing the operations of approximately 4,900 national and District of Columbia banks; the Comptroller also supervises a nationwide staff of approximately 2,000 bank examiners. Charters, mergers, and establishment of branches of national banks require approval of the Comptroller of the Currency.



Workers of the Bureau of Engraving and Printing cut and separate United States paper currency in the Treasury Building. Paper money was first issued by the federal government in 1862. (Library of Congress)

A Customs agent searches a traveller suspected of smuggling. The Customs Service is the only Treasury bureau older than the Department itself. (Library of Congress)



United States Customs Service

The Customs Service was established by the Second, Third and Fifth Acts of the First U.S. Congress in 1789, making it the oldest government agency. The Department of the Treasury was established two months later, and Customs was placed within it.

The functions of the Customs Service are to assess and collect duties and taxes on imported goods, to control carriers of imports and exports, and to combat smuggling and revenue frauds. Customs agents cooperate with other government enforcement and investigative agencies in the administration and enforcement of over 400 statutory and regulatory requirements involving international trade.

Bureau of Engraving and Printing

The U.S. Government began printing money in 1862, when "greenback" currency was issued to finance the Civil War. Five clerks working in the attic of the Treasury Building affixed the Treasury Seal to the bills. The functions of the Bureau of Engraving and Printing were formally established on March 3, 1877.

The Bureau of Engraving and Printing designs, engraves and prints all U.S. paper currency; Treasury bills, notes and bonds; postage, customs, and revenue stamps; commissions, permits, and certificates of award. It is administered by the Treasurer of the United States.

Federal Law Enforcement Training Center

On July 1, 1970, the Federal Law Enforcement Training Center (FLETC) was established for the purpose of instructing agents and officers from various governmental law enforcement agencies, including the Secret Service, Customs, and ATF, but also the Immigration and Naturalization Service and U. S. Park Police in addition to other non-Treasury agencies. The FLETC maintains its principal training facilities in Glynnco, Georgia.

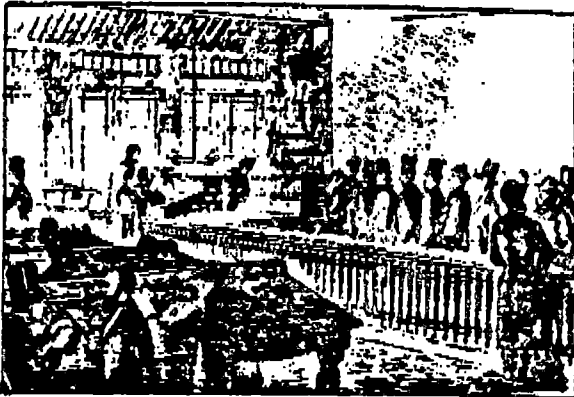
Financial Management Service

Responsible for one of the oldest and most basic functions of the Department of the Treasury, the Financial Management Service (FMS) receives and disburses all public monies, maintains government accounts, and prepares daily and monthly reports on the status of government finances.

While these functions were originally executed by the Register of the Treasury, the Office of the Commissioner of Accounts and Deposits was established in 1920, separating the account-keeping from the Office of the Secretary. The division was



Salmon P. Chase, the twenty-fifth Secretary of the Treasury, served during the Civil War from 1861 to 1864. Under Chase the Bureau of Internal Revenue was established in 1862. (U.S. Treasury)



Taxpayers queue up to pay the first national income tax in 1862, which was levied to finance the Civil War. The Internal Revenue Service is now the largest of the Treasury bureaus. (Library of Congress)

renamed the Bureau of Government Financial Operations in 1974, and became FMS in 1984. With the name change in 1984, the Service was given broader responsibilities, including lead agency roles for programs to improve cash management systems governmentwide.

Internal Revenue Service

The Internal revenue Service (IRS) is responsible for the determination, assessment, and collection of internal revenue in the United States. This revenue consists of personal and corporate income taxes, excise, estate, and gift taxes, as well as employment taxes for the nation's Social Security system.

The Bureau of Internal Revenue was established July 1, 1862, to collect new income taxes, money which was used to pay for the civil War. Although the income tax was declared unconstitutional by the Supreme Court in 1895, the national income tax was reinstated in 1913. The Bureau of Internal Revenue was responsible for enforcement of the Prohibition amendment in the 1920s.

The Bureau of Internal Revenue was reorganized in 1953, and renamed the Internal Revenue Service. It remains the largest of the Treasury bureaus, employing over 100,000 workers nationally.

United States Mint

The Mint of the United States was created by Congress on April 2, 1792, within the Department of State. The Mint was made an independent agency in 1799, and under the Coinage Act of 1873 became part of Treasury. It was placed under auspices of the Treasurer of the United States in 1981.

Mint facilities in Philadelphia, Denver, San Francisco and West Point strike all of the nation's coinage. The gold bullion reserve is protected by the Mint at the West point and Fort Knox Bullion Depositories. The Mint manages extensive commercial marketing programs. The product line includes special coin sets for collectors, national medals, American Eagle Gold and Silver Bullion Coins, and commemorative coins marking national events such as the Bicentennial of the Constitution.



As the fifty-second Secretary of the Treasury (1934-1945), Henry Morgenthau, Jr. served from after the Depression through World War II. During his tenure as Secretary of the Treasury, he served as chairman of the conference at Bretton Woods (1944) which established the International Monetary Fund and the World Bank. (U.S. Treasury)

Bureau of the Public Debt

Originally a function of the Office of the Secretary, the responsibility of managing the federal government's debt was consolidated from several divisions into the Public Debt Service in 1920; bureau status followed in 1940. The Bureau's primary

responsibilities are to administer the Treasury's debt management activities through the issuance of United States Treasury marketable securities and United States Savings Bonds, the servicing of those securities and bonds and the accounting for the resulting public debt.

United States Savings Bonds Division

The U.S. Savings Bonds Division promotes and directs the sale and holding of U.S. Savings Bonds and Notes. These activities originally were part of the War Finance Division, which was established on March 19, 1941. Predecessors of the government bond program were the Liberty Bonds in World War I and the baby Bonds of the late 1930s. The U.S. Savings Bonds Division is now administered by the Treasurer of the United States, who serves as its National Director.

United States Secret Service

The Secret Service was created in 1865 for the express purpose of stopping counterfeiting operations which had sprung up in this country following the introduction of paper currency during the Civil War. The Secret Service maintains its role as guardian of the integrity of our currency, but today



President Franklin D. Roosevelt buys the first War Savings Bond from Secretary Henry Morgenthau on March 19, 1941. (Library of Congress)

it also investigates crimes involving United States securities, coinage, other government issue, credit and debit card fraud, computer fraud, and electronic funds transfer fraud.

The most obvious of its other activities is executive protection, which began after the assassination of President McKinley in 1901. Today the Secret Service protects, among others: the President, Vice President, and members of their immediate families, the visiting head of a foreign state or government and their spouses, former Presidents and their spouses, and major presidential or vice presidential candidates.

This five-pointed badge was used by Special Agents of the United States Secret Service from 1890 to 1971. (U.S. Treasury)



Appendix I

Secretaries of the Treasury	Administration
1. Alexander Hamilton, New York September 11, 1789—January 31, 1795	Washington
2. Oliver Wolcott, Connecticut February 3, 1795—March 3, 1797 March 4, 1797—December 31, 1800	Washington J. Adams
3. Samuel Dexter, Massachusetts January 1, 1801—March 3, 1801 March 4, 1801—May 13, 1801	J. Adams Jefferson
4. Albert Gallatin, Pennsylvania May 14, 1801—March 3, 1809 March 4, 1809—February 8, 1814	Jefferson Madison
5. George W. Campbell, Tennessee February 9, 1814—October 5, 1814	Madison
6. Alexander J. Dallas, Pennsylvania October 6, 1814—October 21, 1816	Madison
7. William H. Crawford, Georgia October 22, 1816—March 3, 1817 March 4, 1817—March 6, 1825	Madison Monroe
8. Richard Rush, Pennsylvania March 7, 1825—March 5, 1829	J. Q. Adams
9. Samuel D. Ingham, Pennsylvania March 6, 1829—June 20, 1831	Jackson
10. Louis McLane, Delaware August 8, 1831—May 28, 1833	Jackson
11. William J. Duane, Pennsylvania May 29, 1833—September 22, 1833	Jackson
12. Roger B. Taney, Maryland September 23, 1833—June 25, 1834	Jackson
13. Levi Woodbury, New Hampshire July 1, 1834—March 3, 1837 March 4, 1837—March 3, 1841	Jackson Van Buren
14. Thomas Ewing, Ohio March 4, 1841—April 4, 1841 April 5, 1841—September 11, 1841	W. H. Harrison Tyler
15. Walter Forward, Pennsylvania September 13, 1841—March 1, 1843	Tyler
16. John C. Spencer, New York March 8, 1843—May 2, 1844	Tyler
17. George M. Bibb, Kentucky July 4, 1844—March 4, 1845 March 5, 1845—March 7, 1845	Tyler Polk

18. Robert J. Walker, Mississippi March 8, 1845—March 5, 1849	Polk
19. William M. Meredith, Pennsylvania March 8, 1849—July 9, 1850 July 10, 1850—July 22, 1850	Taylor Fillmore
20. Thomas Corwin, Ohio July 23, 1850—March 6, 1853	Fillmore
21. James Guthrie, Kentucky March 7, 1853—March 6, 1857	Pierce
22. Howell Cobb, Georgia March 7, 1857—December 8, 1860	Buchanan
23. Philip F. Thomas, Maryland December 12, 1860—January 14, 1861	Buchanan
24. John A. Dix, New York January 15, 1861—March 6, 1861	Buchanan
25. Salmon P. Chase, Ohio March 7, 1861—June 30, 1864	Lincoln
26. William P. Fessenden, Maine July 5, 1864—March 3, 1865	Lincoln
27. Hugh McCulloch, Indiana March 9, 1865—April 15, 1865 April 16, 1865—March 3, 1869	Lincoln A. Johnson
28. George S. Boutwell, Massachusetts March 12, 1869—March 16, 1873	Grant
29. William A. Richardson, Massachusetts March 17, 1873—June 3, 1874	Grant
30. Benjamin H. Bristow, Kentucky June 4, 1874—June 20, 1876	Grant
31. Lot M. Morrill, Maine July 7, 1876—March 3, 1877 March 4, 1877—March 9, 1877	Grant Hayes
32. John Sherman, Ohio March 10, 1877—March 3, 1881	Hayes
33. William Windom, Minnesota March 8, 1881—September 19, 1881 September 20, 1881—November 13, 1881	Garfield Arthur
34. Charles J. Folger, New York November 14, 1881—September 4, 1884	Arthur
35. Walter Q. Gresham, Indiana September 5, 1884—October 30, 1884	Arthur
36. Hugh McCulloch, Indiana October 31, 1884—March 3, 1885 March 4, 1885—March 7, 1885	Arthur Cleveland

37. Daniel Manning, New York March 8, 1885—March 31, 1887	Cleveland
38. Charles S. Fairchild, New York April 1, 1887—March 6, 1889	Cleveland
39. William Windom, Minnesota March 7, 1889—January 29, 1891	B. Harrison
40. Charles Foster, Ohio February 25, 1891—March 3, 1893 March 4, 1893—March 6, 1893	B. Harrison Cleveland
41. John G. Carlisle, Kentucky March 7, 1893—March 3, 1897 March 4, 1897—March 5, 1897	Cleveland McKinley
42. Lyman J. Gage, Illinois March 6, 1897—September 14, 1901 September 15, 1901—January 31, 1902	McKinley T. Roosevelt
43. L. M. Shaw, Iowa February 1, 1902—March 3, 1907	T. Roosevelt
44. George B. Cortelyou, New York March 4, 1907—March 7, 1909	T. Roosevelt
45. Franklin MacVeagh, Illinois March 8, 1909—March 5, 1913	Taft
46. W. G. McAdoo, New York March 6, 1913—December 15, 1918	Wilson
47. Carter Glass, Virginia December 16, 1918—February 1, 1920	Wilson
48. David F. Houston, Missouri February 2, 1920—March 3, 1921	Wilson
49. Andrew W. Mellon, Pennsylvania March 4, 1921—August 2, 1923 August 3, 1923—March 3, 1929 March 4, 1929—February 12, 1932	Harding Coolidge Hoover
50. Ogden L. Mills, New York February 13, 1932—March 4, 1933	Hoover
51. William H. Woodin, New York March 5, 1933—December 31, 1933	F. D. Roosevelt
52. Henry Morgenthau, Jr., New York January 1, 1934—April 12, 1945 April 12, 1945—July 22, 1945	F. D. Roosevelt Truman
53. Fred M. Vinson, Kentucky July 23, 1945—June 23, 1946	Truman
54. John W. Snyder, Missouri June 25, 1946—January 20, 1953	Truman

55. George M. Humphrey, Ohio January 21, 1953—July 29, 1957	Eisenhower
56. Robert B. Anderson, Connecticut July 29, 1957—January 20, 1961	Eisenhower
57. C. Douglas Dillon, New Jersey January 21, 1961—November 22, 1963 November 22, 1963—April 1, 1965	Kennedy L. B. Johnson
58. Henry H. Fowler, Virginia April 1, 1965—December 20, 1968	L. B. Johnson
59. Joseph W. Barr, Indiana December 21, 1968—January 20, 1969	L. B. Johnson
60. David M. Kennedy, Utah January 22, 1969—February 10, 1971	Nixon
61. John B. Connally, Texas February 11, 1971—June 12, 1972	Nixon
62. George P. Shultz, Illinois June 12, 1972—May 8, 1974	Nixon
63. William E. Simon, New Jersey May 8, 1974—August 9, 1974 August 9, 1974—January 20, 1977	Nixon Ford
64. W. Michael Blumenthal, Michigan January 23, 1977—August 4, 1979	Carter
65. G. William Miller, Rhode Island August 7, 1979—January 20, 1981	Carter
66. Donald T. Regan, New Jersey January 22, 1981—February 1, 1985	Reagan
67. James A. Baker, III, Texas February 4, 1985—August 17, 1988	Reagan
68. Nicholas F. Brady, New York September 15, 1988 —	Reagan

Appendix II

Treasurers of the United States

Administration

1. Michael Hillegas, Pennsylvania
July 29, 1775—September 11, 1789
2. Samuel Meredith, Pennsylvania
September 11, 1789—March 3, 1797
March 4, 1797—March 3, 1801
March 4, 1801—October 31, 1801
Washington
J. Adams
Jefferson
3. Thomas T. Tucker, South Carolina
December 1, 1801—March 3, 1809
March 4, 1809—March 3, 1817
March 4, 1817—March 6, 1825
March 7, 1825—May 2, 1828
Jefferson
Madison
Monroe
J.Q. Adams
4. William Clark, Pennsylvania
June 4, 1828—March 5, 1829
March 6, 1829—May 31, 1829
J.Q. Adams
Jackson
5. John Campbell, Virginia
May 26, 1829—March 3, 1837
March 4, 1837—July 20, 1839
Jackson
Van Buren
6. William Selden, Virginia
July 22, 1839—March 3, 1841
March 4, 1841—April 4, 1841
April 5, 1841—March 4, 1845
March 5, 1845—March 5, 1849
March 6, 1849—July 9, 1850
July 10, 1850—November 23, 1850
Van Buren
W.H. Harrison
Tyler
Polk
Taylor
Fillmore
7. John Sloan, Ohio
November 27, 1850—April 6, 1852
Fillmore
8. Samuel Casey, Kentucky
April 4, 1853—March 6, 1857
March 7, 1857—December 22, 1859
Pierce
Buchanan
9. William C. Price, Missouri
February 28, 1860—March 6, 1861
March 7, 1861—March 21, 1861
Buchanan
Lincoln
10. F.E. Spinner, New York
March 16, 1861—April 15, 1865
April 16, 1865—March 3, 1869
March 4, 1869—June 30, 1873
Lincoln
A. Johnson
Grant
11. John C. New, Indiana
June 30, 1873—July 1, 1876
Grant
12. A.U. Wyman, Wisconsin
July 1, 1876—March 3, 1877
March 4, 1877—June 30, 1877
Grant
Hayes
13. James Gilfillan, Connecticut
July 1, 1877—March 3, 1881
March 4, 1881—September 19, 1881
September 20, 1881—March 31, 1883
Hayes
Garfield
Arthur

14. A.U. Wyman, Wisconsin
April 1, 1883—March 3, 1885
March 4, 1885—April 30, 1885
Arthur
Cleveland
15. Conrad N. Jordan, New York
May 1, 1885—May 23, 1887
Cleveland
16. James W. Hyatt, Connecticut
May 24, 1887—March 6, 1889
March 7, 1889—May 10, 1889
Cleveland
B. Harrison
17. J.N. Huston, Indiana
May 11, 1889—April 24, 1891
B. Harrison
18. Enos H. Nebecker, Indiana
April 25, 1891—March 3, 1893
March 4, 1893—May 31, 1893
B. Harrison
Cleveland
19. D.N. Morgan, Connecticut
June 1, 1893—March 3, 1897
March 4, 1897—June 30, 1897
Cleveland
McKinley
20. Ellis H. Roberts, New York
July 1, 1897—September 14, 1901
September 15, 1901—June 30, 1905
McKinley
T. Roosevelt
21. Charles H. Treat, New York
July 1, 1905—March 7, 1909
March 8, 1909—October 30, 1909
T. Roosevelt
Taft
22. Lee McClung, Tennessee
November 1, 1909—November 21, 1912
Taft
23. Carmel A. Thompson, Ohio
November 22, 1912—November 21, 1912
March 6, 1913—March 31, 1913
Taft
Wilson
24. John Burke, North Dakota
April 1, 1913—January 5, 1921
Wilson
25. Frank White, North Dakota
May 2, 1921—August 2, 1923
August 3, 1923—May 1, 1928
Harding
Coolidge
26. H.T. Tate, Tennessee
May 31, 1928—January 17, 1929
Coolidge
27. W.O. Woods, Kansas
January 18, 1929—March 3, 1929
March 4, 1929—March 4, 1933
March 5, 1933—May 31, 1933
Coolidge
Hoover
F.D. Roosevelt
28. W.A. Julian, Ohio
June 1, 1933—April 12, 1945
April 12, 1945—May 29, 1949
F.D. Roosevelt
Truman
29. Georgia Neese Clark, Kansas
June 21, 1949—January 20, 1953
January 21, 1953—January 27, 1953
Truman
Eisenhower

30. Ivy Baker Priest, Utah
January 28, 1953-January 20, 1961 Eisenhower
January 21, 1961-January 29, 1961 Kennedy
31. Elizabeth Rudel Smith, California
January 30, 1961-April 13, 1962 Kennedy
32. Kathryn O'Hay Granahan, Pennsylvania
January 3, 1963-November 22, 1963 Kennedy
November 22, 1963-November 20, 1966 L. B. Johnson
33. Dorothy Andrews Elston, Delaware
May 8, 1969-September 17, 1970 Nixon
Dorothy Andrews Kabis, Delaware
September 17, 1970-July 3, 1971 Nixon
34. Romana Acosta Banuelos, California
December 17, 1971-February 14, 1974 Nixon
35. Francine Irving Neff, New Mexico
June 21, 1974-January, 1977 Ford
36. Azie Taylor Morton, Texas
September 12, 1977-January, 1981 Carter
37. Angela Marie Buchanan,
District of Columbia
March 17, 1981-July 5, 1983 Reagan
38. Katherine D. Ortega, New Mexico
September 22, 1983 Reagan



The Treasury Seal became official with Treasury Order No. 212, signed by Secretary Henry H. Fowler on January 29, 1968. The seal appears on the face of all United States paper currency.

DOUG GAMBLE

8/24/89

2355
5127

424 - 36th Place
Manhattan Beach, CA 90266
(213) 546-6409

TO: KRISTEN GEAR

2 pages

2:30
11/13/67

Karl Fritz

200TH ANNIVERSARY OF TREASURY DEPT. (Sept. 11/89)

I UNDERSTAND THE TREASURY DEPARTMENT WANTED TO CELEBRATE ITS 200TH ANNIVERSARY THE WAY MALCOLM FORBES CELEBRATED HIS 70TH, BUT UNFORTUNATELY TREASURY DOESN'T HAVE AS MUCH MONEY AS MALCOLM DOES.

IT'S HANDY TO HAVE THE TREASURY DEPARTMENT AS OUR NEIGHBORS JUST DOWN THE STREET ON PENNSYLVANIA AVENUE. YOU NEVER KNOW WHEN YOU MIGHT WANT TO POP NEXT DOOR TO BORROW A CUP OF MONEY.

THE AMERICAN MONETARY SYSTEM WAS INVENTED BY THOMAS JEFFERSON. BEEN OTHERS WHO INVENTED MONEY, BUT THEY'RE IN PRISON.

I ALWAYS WONDERED WHY THE INVENTOR OF OUR MONETARY SYSTEM WAS HIS FACE ON THE TWO DOLLAR BILL. OF COURSE, SOME PEOPLE HAVE FACE APPEAR ON THE THREE DOLLAR BILL.

Peggy—
For Treas.
File, if
you wish.
— Dan

MOR

TO: KRISTEN GEAR - TREASURY BIRTHDAY (CONT'D)

I THINK I'M STILL AFFECTED BY SOMETHING THAT HAPPENED BETWEEN THE WHITE HOUSE AND THE TREASURY DEPARTMENT IN 1985. EVERYTIME I HEAR AN ANNOUNCER ON TV SAY THERE'S BEEN A BIG TRADE, I THINK IT MIGHT MEAN JOHN SUNUNU IS GOING TO TREASURY AND NICK BRADY IS COMING OVER TO THE WHITE HOUSE.

YOU CAN TELL THAT THE U.S. CUSTOMS SERVICE COMES UNDER THE JURISDICTION OF THE TREASURY DEPARTMENT. NICK BRADY LOOKED AFTER MILLIE FOR US ONE WEEKEND, AND WHEN MILLIE CAME HOME SHE SPENT AN HOUR AND A HALF SNIFFING ALL OUR SUITCASES.

TWO TREASURY SECRETARIES, GEORGE SHULTZ AND JIM BAKER, BECAME SECRETARIES OF STATE, SO I HOPE NICK BRADY IS KEEPING HIS TOOTHBRUSH PACKED AND HIS SHOTS UP TO DATE.

I GUESS THERE'S A NATURAL TRANSITION FROM BEING SECRETARY OF THE TREASURY TO SECRETARY OF STATE. ONCE YOU'VE NEGOTIATED WITH THE CHAIRMAN OF THE FEDERAL RESERVE, GORBACHEV IS A PIECE OF CAKE.

3383
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UNIVERSITY OF WISCONSIN STUDIES

IN

THE SOCIAL SCIENCES AND HISTORY

NUMBER 20

THE MONEY SUPPLY OF THE
AMERICAN COLONIES
BEFORE 1720

157

By

CURTIS PUTNAM NETTELS

"

Professor of History in the University of Wisconsin
Fellow of the John Simon Guggenheim Memorial Foundation

MADISON, WISCONSIN

1934

Copy 2

*Commodities
as money*

In the earliest days of settlement the shortage of coin had forced the colonists to use certain commodities as money. Among such products of most consequence were wheat, beef, and pork: all these were commonly employed in Carolina and in the colonies north of Maryland. Tobacco and sugar were also of major importance, for they formed the principal currency of two important regions. The Leeward Islands relied on sugar for transacting all sorts of business; so did Barbados to a lesser extent. The middle colonies and North Carolina used tobacco along with many other forms of commodity money; whereas Virginia and Maryland depended upon it almost entirely.

A second group of commodities in the northern area, although not so important as those of the first group, included peas, Indian corn, barley, and rye. In South Carolina rice likewise became popular. The third group consisted of commodities that were less commonly used—such as lumber and fish in New Hampshire, flax and hemp in Pennsylvania and Maryland, wool in Rhode Island, pitch and tar in Carolina, and cattle and dairy products in southern New England.¹⁴

¹⁴ Of North Carolina, the Reverend William Gordon wrote in 1709: "In this as in all other parts of the province, there is no money; every one buys and pays with their commodities, of which corn, pork, pitch are the chief." Quoted in C. J. Bullock, *Essays on the Monetary History of the United States* (New York, 1900), 125. A South Carolina act of 1687 defined the following commodities as money: wheat, peas, pork, beef, tobacco, and tar. *South Carolina Statutes*, II, 37. An act of March 16, 1696, continuing the use of these commodities was not repeated until 1731, C. O. 5:411, 45, 556. East New Jersey in 1692 used wheat, Indian corn, butter, pork, beef, and tobacco. *New Jersey Grants*, 324. The list of money commodities in New York at this time included pork, beef and winter wheat. C. O. 5:1050, no. 7(iv). The Massachusetts products in 1690 were wheat, Indian corn, barley, peas, oats, pork and beef. Weeden, I, 382. New Hampshire in the years 1701-9 listed eight kinds of boards or staves, four kinds of fish as well as pork, beef, peas, wheat, and Indian corn. C. O. 5:862, no. 109; *New Hampshire Laws*, C. O. 5:951, 17-18, 74, 89-90, 94. The common products of Connecticut were wheat, peas, Indian corn, rye, pork, and beef. Connecticut Acts (1702), C. O. 5:537, 101; act of 8 June, 1709, *Colonial Records of Connecticut*, 1706-16, 112. Between 1710 and 1720 commodities were not authorized as tax money in Connecticut, but in October, 1720, as a result of the scarcity of other money, the General Court again agreed to receive wheat, rye, and Indian corn. Henry Bronson, "A Historical Account of Connecticut Currency . . .," in *Papers of the New Haven Historical Society* (New Haven, 1865), I, 38. Pennsylvania by acts of 1683, 1693 and 1700 made hemp, flax, wheat, rye, oats, barley, Indian corn, tobacco, beef, pork, and hides current money. *Pennsylvania Colonial Records*, I, 102; *Pennsylvania Charter and Laws*, 229; *Pennsylvania Statutes*, II, 126. For the use of sugar in Barbados and the Leeward Islands, see Pitman, Chapter 6. Regarding tobacco as money, see Andros to Shrewsbury, June 4, 1695, C. O. 5:1507, no. 24; Nicholson to Board of Trade, March 5, 1705, C. O. 5:1314, no. 43; Beyrens, 13.



DEPARTMENT OF THE TREASURY
BUREAU OF ENGRAVING AND PRINTING
WASHINGTON, D C 20225

THE GREEN IN "GREENBACKS"

The reason for the selection of green as the color for the backs of currency notes has been among the more popular question put to the Bureau. It is known that at the time of the introduction of small-sized notes in 1929, the use of green was continued because pigment of that color was readily available in large quantity, the color was relatively high in its resistance to chemical and physical changes, and green was psychologically identified with the strong and stable credit of the Government. But no definite explanation can be made for the original choice. In the course of preparing this history, much attention was given to the matter. Extensive research developed evidence in support of the following explanation.

With the growing popularity of banknotes and the development of photography in the mid-1800's, it was customary to print the bills in black combined with colored tints as a deterrent to counterfeiting. The early camera saw everything in black. Features that were distinguishable on a note by color variant lost their individuality when reproduced photographically. However, the counterfeiter soon discovered that the colored inks then in use could easily be removed from a note without disturbing the black ink. He could eradicate the colored portion, photograph the remainder, and then make a desired number of copies to be overprinted with an imitation of the colored parts. The solution to the problem lay in the development of an ink that could not be erased without adversely affecting the black coloring. Such an ink was developed and the patent rights were purchased by Tracy R. Edson, who later was one of the founders of the American Bank Note Company. This is one of the same firms that produced the first paper money issued by the United States. The faces of these and other early notes produced under contract were printed with a green tint, presumably of the protective ink.

It is not unusual in printing with oil-base-type inks, such as was the "patent green," for the color to strike through to the opposite side of a sheet. It might, therefore, be conjectured that the backs of the early notes were printed in a darker shade of ordinary green to make the tint "strike through" less obvious.

Since the transition of printing money exclusively at the Treasury was gradual, it is logical to presume that the backs of the notes produced there during the intervening period were printed in green for the sake of uniformity. Once the Bureau was on full-scale production, there was no reason to change the traditional color and the practice was continued.

facts about united states money

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historical

The Nation's money is manufactured by the Department of the Treasury through the Bureau of the Mint which produces coins and the Bureau of Engraving and Printing which produces paper currency.

In the early days of our Nation before United States money was issued there were in circulation English shillings, French louis d'or, and Spanish doubloons, with other units of the money of those nations. These various coins caused confusion and slowed up trade. The dollar was adopted as the unit of our money by the Congress existing under the Articles of Confederation in 1785 and the decimal system as the method of reckoning. In 1792 the United States monetary system was established, and the United States Mint began coining money at Philadelphia in 1793. The Bureau of Engraving and Printing came into existence in August, 1862.

The first coins of the United States were authorized by the Act of April 2, 1792, which provided for the establishment of the Mint and the issuance of the following coins:

Gold:	Eagles	(each of the value of ten units or dollars), half eagles, quarter eagles.
Silver:	Dollars	half dollars, quarter dollars, dimes, and half dimes.
Copper:	Cents and half cents	

Many changes in the laws governing coinage, and in the denominations themselves have been made since the original act. Coins no longer in use include the half cent, 2-cent, 3-cent and 20-cent pieces, and a 5-cent silver piece known as a "half

dime." Gold coins were struck from 1795 through 1933, in denominations ranging from one dollar to \$20 dollars. The minting and issuance of gold coins was terminated by Section 5 of the Gold Reserve Act approved January 30, 1934.

Paper currency was used by our people even before the Declaration of Independence was signed. It was called Continental currency. Its value depreciated so that "Not worth a Continental" became a common saying. In the period between the adoption of the Constitution in 1789 and the issuance of the first currency notes by the U.S. Government, bank notes, issued by banks operating under Federal or State charters, were in use.

The first paper money issued by the U.S. Government consisted of noninterest-bearing Treasury demand notes authorized under the Acts of July 17 and August 5, 1861, and February 12, 1862. These notes were in the \$5, \$10, and \$20 denominations.

2 The Act of February 25, 1862 authorized an issue of United States notes, popularly referred to as "greenbacks," or "legal tenders," in which the \$1, \$2, \$5, \$10, \$20, \$50, \$100, \$500, and \$1,000 denominations appeared.

As in the case of coins, many changes in the laws governing our currency have been made over the years.

coins now authorized

The coins currently authorized by the United States are dollars; subsidiary coins in denominations of fifty cents (half dollars), twenty-five cents (quarter dollars), ten cents (dimes); and minor coins in denominations of five cents (nickels) and one cent.



President Lyndon B. Johnson signed an historic bill July 23, 1965, providing for the first major change in United States coinage in more than a century. Silver was eliminated from the dime and the quarter, and substantially reduced in the half dollar. A world shortage of silver and the necessity of conserving this metal for industrial and military uses were the motivating factors behind passage of the Coinage Act of 1965, which authorized this departure from the traditional silver alloy.

3 On December 31, 1970, President Nixon signed into law the Bank Holding Company Act. Contained in the legislation were important sections relating to coinage. One provided for the removal of all silver from the dollar denomination and its coinage in the cupro-nickel clad composition, another directed that the new dollars bear the likeness of the late President Dwight David Eisenhower and a design emblematic of the symbolic eagle of the Apollo 11 landing on the moon. A special provision in the Act permits the Mint to strike, for sale to coin collectors, 150 million premium-priced dollar coins containing 40 percent silver, these to be minted over a period of several years. Meanwhile, the non-silver dollars will be manufactured on a continuing basis for general use. The last coinage of silver

dollars for regular circulation took place in 1935.

Still another section of the 1970 coinage law provided for the removal of all silver from the half dollar. All dimes, quarters, half dollars and dollars now produced for regular circulation are cupro-nickel clad metal.

An Act approved October 18, 1973, gives the Director of the Mint authority to change the reverse designs of the dollar, half dollar and quarter to ones emblematic of the Bicentennial of the American Revolution. The coins minted for general use are of the same cupro-nickel composition as set forth in the basic specifications below. Individually packaged proof and uncirculated specimens will be made available to collectors, and these will contain 40 percent silver and 60 percent copper, as provided in the legislation.

4 specifications for united states coins

SEC. 201. Section 101 of the Coinage Act of 1906 (31 U.S.C. 381) is amended to read as follows:

"SEC. 101. (a) The Secretary may mint and issue coins of the denominations set forth in subsection (c) in such quantities as he determines to be necessary to meet national needs.

"(b) Any coin minted under authority of subsection (a) shall be a clad coin. The cladding shall be an alloy of 75 per centum copper and 25 per centum nickel, and shall weigh not less than 30 per centum of the weight of the whole coin. The core shall be copper.

"(c) (1) The dollar shall be 1.500 inches in diameter and weigh 22.68 grams.

"(2) The half dollar shall be 1.205 inches in diameter and weigh 11.34 grams.

"(3) The quarter dollar shall be 0.965 inch in diameter and weigh 5.67 grams.

"(4) The dime shall be 0.705 inch in diameter and weigh 2.268 grams.

"(d) Notwithstanding the foregoing, the Secretary is authorized to mint and issue not more than one hundred and fifty million one-dollar pieces which shall have—

"(1) a diameter of 1.500 inches;

"(2) a cladding of an alloy of eight hundred parts of silver and two hundred parts of copper; and

"(3) a core of an alloy of silver and copper such that the whole coin weighs 24.592 grams and contains 9.837 grams of silver and 14.755 grams of copper."

Subsidiary 90 Percent Silver Coins. The Coinage Act of 1965 provided the Secretary of the Treasury authority to produce half dollars, quarter dollars, and dimes from 900 fine coin silver until such date as it was determined that adequate supplies of the clad coins were available and, in no event, later than five years after the date of enactment of the Act. The last of the 90 percent silver quarters were struck in January 1966, the last of these dimes in February 1966, and the last of the halves in April 1966. The specifications for the 90 percent silver coins are as follows:

Kind and Denomination	Metal Content (grains)		Gross Weight (grains)
	Silver	Copper	
Silver:			
Half dollar	173.61	19.29	192.90
Quarter dollar	86.805	9.645	96.45
Dime	34.722	3.858	38.58

Minor Coins. The specifications for 5-cent and 1-cent coins are as follows:

Denomination	Metal Content (grains)		Gross Weight (grains)
	Nickel	Copper	
Five cents	19.29	57.87	77.16
One cent	Zinc	Copper	48.00
	2.40	45.60	

During 1943, a zinc-coated, steel cent was coined as a wartime metal-saving measure. During the war the five-cent piece contained 27.008 grains of silver, 43.2096 grains of copper, and 8.944 grains of manganese. The authority to mint the wartime five-cent coins expired December 31, 1945.

how money is coined

United States 5-cent coins are cupro-nickel pieces composed of 75 percent copper and 25 percent nickel. Our cents are bronze

and contain 95 percent copper and 5 percent zinc.

Pure metals, accurately weighed and combined to produce these alloys, are melted in electric furnaces to form a homogeneous mass and are cast into coinage ingots in water-cooled molds.

The ingots are passed several times through rolling mills which reduce them to long strips of the exact thickness or gauge required for the denominations being produced. The strips are fed into high speed punch presses which cut planchets or blanks of the proper diameter. Both the cupro-nickel and bronze planchets are softened by annealing in a special type furnace, cleaned, and dried.

Planchets for the 5-cent and 1-cent coins are put through an edge rolling operation which produces a raised rim on them. With a single stroke, the coining press stamps the designs of both the obverse and reverse dies on the planchet.

6 The dime, quarter, half dollar, and dollar are manufactured from strips composed of three layers of metal bonded together and rolled to the required thickness. This is called "cladding." The face is 75 percent copper and 25 percent nickel and the core is pure copper, which is visible on the edges of the coins.

Initially, all clad material was purchased from outside manufacturers since the Mint did not have the capability of producing clad strip. The Mint has since developed this capacity and now produces a large portion of the clad strip in-house. The three strips to be bonded are softened in large coil annealing furnaces, carefully cleaned, wire brushed, and are rolled together under high pressures. The clad strip is then rolled to final blank thickness. From this point forward, the manufacturing processes are the same as for the 5-cent and 1-cent coins. The edges of the dimes, quarters,

half dollars, and dollars are reeded. This familiar element is also produced as a part of the stamping operation.

All denominations are counted and bagged preparatory to shipment to the Federal Reserve banks. Dimes, quarters, half dollars, and dollars are sacked \$1,000 per bag for each denomination; nickels are sacked \$200 per bag; and cents, \$50 per bag.

coin designs

No change in the design of a coin may be made for 25 years after its adoption. An Act of Congress would be necessary before the expiration of this period. There is no restriction upon the length of time a design may remain in use upon expiration of the limitation set by law.

Usually, the selection of coin designs is made by the Director of the Mint, with the approval of the Secretary of the Treasury. However, in a few instances, Congress has prescribed the designs. As a part of the bicentennial celebration of Washington's birth, held in 1932, Congress declared that the likeness of our first President should appear on the quarter dollar. 7

The John F. Kennedy likeness was placed on the half dollar by Act of Congress approved December 30, 1963, and the first coins were released March 24, 1964.

On December 31, 1970, legislation approved by the Congress directed placement of the likeness of former President Dwight D. Eisenhower upon the obverse of the dollar coin, with a representation of the Apollo 11 insignia upon the reverse.

The Lincoln cent was the first portrait coin of a regular series minted by the United States. The occasion of the 100th anniversary of Lincoln's birth aroused sentiment sufficiently strong to overcome a long-pre-

vailing, popular prejudice against the use of portraits on the coins. A new reverse design was adopted in 1959, in connection with the observance of the sesquicentennial of Lincoln's birth. The familiar likeness on the obverse remains unchanged.

Portraits of United States Presidents are on coins now being manufactured. In addition to those mentioned above, Thomas Jefferson is honored on the 5-cent piece by the design adopted in 1938, while the likeness of Franklin D. Roosevelt appears on the dime design introduced in 1946.

Portraits of living persons on our coins are extremely rare, being confined to a few commemorative issues of limited minting.

paper currency in general circulation

8 Only two kinds of paper currency notes are now being produced.

Federal Reserve notes are issued and retired according to varying requirements of the country for currency. These notes constitute over 99 percent of the paper currency in circulation. They are issued by the Federal Reserve banks in denominations of \$1, \$5, \$10, \$20, \$50, and \$100. On July 14, 1969, the Department of the Treasury announced that the issuance of currency in denominations of \$500, \$1,000, \$5,000 and \$10,000 would be discontinued because of the little demand for them. Federal Reserve notes are obligations of the United States and are a first lien on the assets of the issuing Federal Reserve bank. In addition they are secured by a pledge of collateral equal to the face value of the notes. This collateral must consist of the following assets, alone or in any combination: (1) gold certificates, (2) Special Drawing Right

certificates, (3) United States Government securities, and (4) "eligible paper" as described by statute.

United States notes, which make up less than one percent of the circulating currency, are now being printed in the \$100 denominations. On August 10, 1966, the Treasury Department announced that \$2 United States notes would no longer be printed. The last \$5 United States notes were checked out of the vault of the Treasurer of the United States on April 1, 1969. As required by the Act of May 31, 1878, the amount of United States notes outstanding is maintained at \$322,539,016.

Relatively small amounts of several discontinued types of currency notes are still outstanding. It is assumed that most of these notes are in the possession of collectors. These types are as follows: demand notes, fractional currency, gold certificates, National bank notes, Treasury notes of 1890, Federal Reserve bank notes, and Silver Certificates.

printing paper currency

Standards employed by the Bureau of Engraving and Printing in the manufacture of United States paper currency are very rigid. The intaglio process of printing is used to print the basic back and face designs. This process provides maximum security against counterfeiting.

An intaglio is an incised design which is cut or engraved below the surface and which produces a printed impression in relief. This three dimensional effect is most difficult to produce and requires the combined handiwork of highly skilled artists, steel engravers, and plate printers.

When a new currency note is to be issued, designs are discussed by interested Gov-

ernment officials and are then submitted to the designers of the Bureau of Engraving and Printing who prepare models. The final model must be approved by the Secretary of the Treasury. Photographic copies of the approved model are then furnished to the engravers.

10 The engravers reproduce the currency designs in pieces of soft steel, known as "dies," by working with steel-cutting instruments, called gravers, and powerful magnifying glasses. Separate portions of the design, such as the portrait, the vignette, the ornaments, and the lettering, are hand cut by engravers, who have been specially trained in that particular style. A geometric lathe is used to cut the intricate lacy ornaments and borders and a ruling machine is used to cut the fine cross-hatched lines in the portraits. It is practically impossible for an engraver to exactly reproduce his own work or that of another engraver. To become a skilled picture engraver requires a ten year apprenticeship; to become a skilled letter engraver requires seven years apprenticeship.

When the engraved dies have been completed, they are cleaned, and then hardened by being heated in sodium cyanide and quickly dipped into brine. The design of each die is then transferred to a roll or cylinder of soft steel by placing the die on the bed of a transfer press and, under tremendous pressure, forcing the face of the soft roll into the intaglio engraving on the hard die. The result is an exact reproduction of the original design standing out in relief on the face of the roll. To make a complete master die by the transfer process, the individual rolls are pressed into soft steel under great pressure. Different portions of the engraving are thereby united in their proper positions. The master die is then finished and hardened and a master roll, bearing one subject, or all of the designs necessary to make up one currency note, is made by the transfer process. A

master plate is then made from the master roll, also by means of the transfer process.

The electrolytic process is used for making plates for the printing of paper currency. The steel master plate is placed in a nickel plating bath and by means of electro-deposition a shell is built thereon to a required thickness. This shell is referred to as an alto, and when it is removed from the master plate the design stands out in relief on a flat surface. A duplicate shell, known as a basso, is then reproduced in the nickel plating bath from the relief design. These bassos, with the design in the intaglio or cut-in impression as on the original master, are then electrolytically plated with chromium and made ready for printing.

All United States paper currency is printed on modern high-speed sheet-fed rotary presses by the dry intaglio process, which provides for a relatively high degree of dimensional stability in the paper. Special distinctive paper, manufactured by private contractors under strict Government specifications, is used for the printing of all notes. 11

Each plate produces a sheet of 32 subjects, or notes. The most recently acquired presses accommodate four plates and are capable of printing 8,000 sheets per hour, an increase of approximately 200 percent over the first rotary presses purchased by the Bureau.

Upon completion of the basic back and face printings, the 32-subject sheets are trimmed to a uniform dimension and the serial numbers, the Treasury seal; and, in the case of Federal Reserve notes, the Federal Reserve Bank designations are simultaneously overprinted on the face of each note by the typographic process on two-color rotary presses.

A detailed examination to identify imperfect notes for later removal is made of each sheet, after which the sheets, in units of

500, are cut into individual notes. After a final note examination for the removal of the imperfect notes and their replacement with "star" notes, the currency is manually steel-banded and wrapped in packages for delivery. Each currency package contains 40 bands of 100 notes each and weighs about 8½ pounds.

Newly designed prototype currency overprinting and processing equipment was placed in operation during 1971. Sheets containing 32 perfect notes are segregated for the simultaneous printing of serial numbers, seals, and bank designations on this equipment. The serial numbers are electronically checked for accuracy, the sheets cut to notes, and the notes, counted and assembled in units of 100, are delivered from the machine for packaging prior to delivery to banks. Complete conversion to this newer and more efficient process is anticipated in the near future.

12 A change in the method of printing the series designation and the signatures of the Secretary of the Treasury and the Treasurer of the United States on currency notes was adopted in 1968. Previously, the series year and signatures had been overprinted typographically following the printing of the back and face designs. Upon complete conversion to the dry-printing method on high-speed, sheet-fed, rotary presses, it was found to be more efficient and economical to incorporate the signatures and the series date as integral parts of the face design. This technique was used in the production of the \$100 United States note, Series 1968, which was first issued in 1968. This technique was also used in the printing of \$1 Federal Reserve notes, Series 1963B, and was continued in all other currency production beginning with the Series 1969 notes.

Counterfeiting

Each year the American public loses between \$2 and \$4 million due to the counter-

feiting of U.S. currency. The best method of detecting a counterfeit is to compare the suspect bill with a genuine bill of the same denomination and series. Look for differences, not similarities.

Look for red and blue fibers embedded in the paper. Look for the three-dimensional quality of the printing. Look for clarity in the portrait, and distinct edges on the Treasury seal.

If you suspect you have received a counterfeit note, contact the police or the United States Secret Service.

paper currency designs

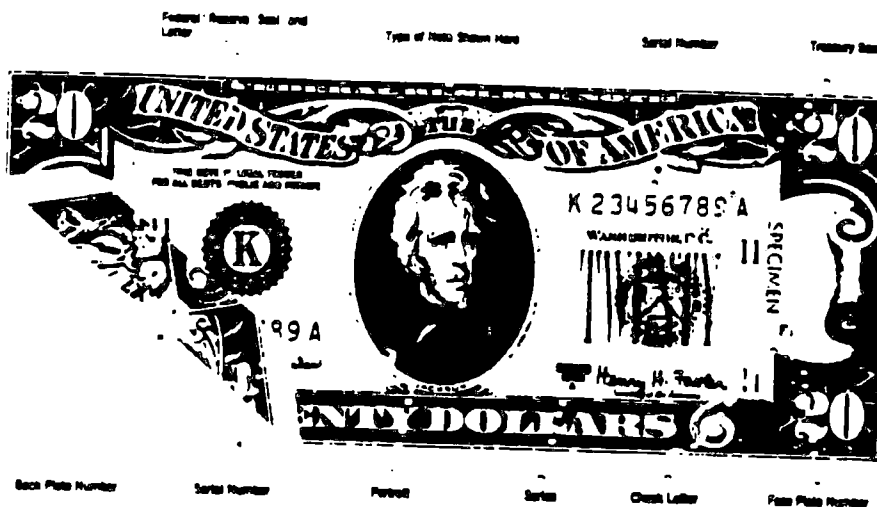
The selection of designs used on our paper currency, including the portraits, is a responsibility of the Secretary of the Treasury, who acts with the advice of responsible officials, such as the Director of the Bureau of Engraving and Printing, the Treasurer of the United States, and the Board of Governors of the Federal Reserve System.

None of the letters, numbers, or symbols on currency issued under the authority of the United States has any sectarian significance.

Design features that have historical or idealistic significance, as distinct from purely ornamental or security implications, include the following:

(1) the department of the treasury seal.

The new seal of the Department of the Treasury, approved on January 29, 1968 is overprinted on the face of each note. This seal has the inscription, "The Department of the Treasury" which replaces the former Latin legend "Thesaur. Amer. Septent. Sig-ill.," an abbreviation said to represent "The-



14

positions
of important
features on paper
currency

15

1
3

sauri Americae Septentrionalis Sigillum," translated as "The Seal of the Treasury of North America." The new seal bears the



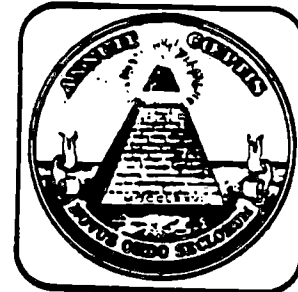
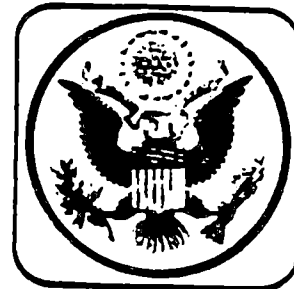
date "1789," the year of the Department's creation. Balance scales, representing justice; a key, the emblem of official authority; and a chevron with 13 stars for the original states appear on the seal. On United States notes, the Treasury seal, along with the serial numbers, is overprinted in red; on Federal Reserve notes, these features are overprinted in green.

16 positions of important features on paper currency

(2) the great seal of the united states.

Both the obverse and the reverse of the Great Seal of the United States, adopted in 1782, are reproduced on the back of \$1 bills. The obverse depicts an American eagle breasted by our national shield. The eagle holds in its right talon an olive branch of 13 leaves and 13 berries symbolic of peace. In the left talon are 13 arrows signifying the original colonies' fight for liberty. A ribbon flying from the beak of the eagle is inscribed with the Latin motto, "E Pluribus Unum," translated "One out of many," in reference to the unity of the 13 colonies as one government. Over the ea-

gle's head is a constellation of 13 five-pointed stars surrounded by a wreath of clouds.



The reverse of the seal depicts a pyramid, with 1776, the year of the Declaration of Independence in the Roman numerals MDCCLXXVI" on its base. The pyramid represents permanence and strength. Its unfinished condition symbolizes that there was still work to be done to form a more perfect government and signifies the expectation still work to be done to form a more perfect Union. The eye in the triangular glory represents an all-seeing Deity. The words "Annuat coepta," translated as "He [God] has favored our undertakings," refer to the many interpositions of Divine Providence in the forming of our Government. "Novus Ordo Seclorum," translated as "A new order of the ages," signifies a new American era.

(3) portraits of great americans

Law specifies that "No portrait shall be placed upon any of the bonds, securities,

notes, fractional or postal currency of the United States, while the original of such portrait is living." (31 U.S.C. 413). Accordingly, the portraits used on our paper money are those of deceased persons whose places in history are well known to the American people.

(4) pictures of famous buildings or monuments.

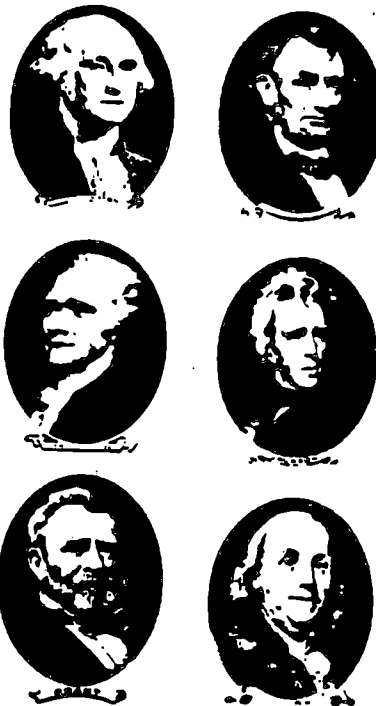
Along with the introduction of small-sized currency notes in 1929, uniform back designs were adopted, many of them including vignettes of buildings or monuments closely associated with the persons pictured on the faces of the notes.

The portraits and back designs on United States currency notes now being printed are as follows:

Denomination and Class	Portrait	Back Design
\$1 Federal Reserve Note	Washington	Great Seal of the United States (Obverse and Reverse)
\$2 Federal Reserve Note	Jefferson	Signing of Declaration of Independence
\$5 Federal Reserve Note	Lincoln	Lincoln Memorial
\$10 Federal Reserve Note	Hamilton	U.S. Treasury Building
\$20 Federal Reserve Note	Jackson	White House
\$50 Federal Reserve Note	Grant	U.S. Capitol
\$100 Federal Reserve Note	Franklin	Independence Hall
\$100 United States Note	Franklin	Independence Hall

Notes of the \$500, \$1,000, \$5,000, and \$10,000 denominations have not been printed for many years and, as they are returned to Federal Reserve banks, are removed from circulation. The portraits selected for these notes were: McKinley for the \$500, Cleveland for the \$1,000, Madison for the \$5,000, and Chase for the \$10,000.

The Series 1976 \$2 Federal Reserve Note was issued on April 13, 1976. The obverse features an engraving of Thomas Jefferson



taken from a portrait painted in the early 1800's by Gilbert Stuart. The reverse of the note incorporates a rendition of the "Signing of the Declaration of Independence" painted by John Trumbull during the post-Revolutionary War period, and which now hangs in the Trumbull Gallery at Yale University.

The reissuance of the \$2 bill is estimated to save the government \$4-7 million per year in printing, handling and distribution of one-dollar bills.

star notes

When a note is mutilated in the course of manufacture it has to be replaced. To replace it with a note of exactly the same serial number would require the use of special machinery and would be costly and

delaying. In consequence, "star" notes are substituted. Except that they have their own serial number with a star, these notes are the same as the others, and, of course, worth only the face value. On United States notes, a red star is substituted for the prefix letter; on Federal Reserve notes, a green star is substituted for the suffix letter.

A "star" note is also used for the 100,000,000th note in a series, since eight digits are the maximum practicable in the mechanical operation of the numbering machines.

federal reserve bank designations

On the face of Federal Reserve notes

1 A Boston	7 G Chicago
2 B New York	8 H St. Louis
3 C Philadelphia	9 I Minneapolis
4 D Cleveland	10 J Kansas City
5 E Richmond	11 K Dallas
6 F Atlanta	12 L San Francisco

The Federal Reserve bank number is repeated in the upper and lower left and right corners of the bill. These numbers are helpful in cases involving claims made by the public for redemption of burned or mutilated notes, when only portions of the notes can be identified.

serial numbers

The two identical series of numbers, including the prefix and suffix letters or "star," in the upper right and lower left sections of the notes, are referred to as serial numbers.

The letter in the Federal Reserve bank seal and the prefix letter of the serial numbers are always identical.

plate position numbers

The small capital letter and the numeral which appear in the upper left corner just below the denomination counter on the face of a bill designates the position of the note on the 32-subject face plate from which it was printed.

plate serial numbers

The small number or series of digits in the lower right corner on the face and back of the note indicates the serial number of the plate from which a note was printed. These numbers are used to determine the press plate from which a particular note was printed. The letter preceding this number on the face is always the same as the letter in the upper left corner.

series date

The series date on the face of each bill signifies the year in which the design of the note was adopted. The series on currency notes does not change each calendar year as it does on coins but only when there is a major revision in the basic design. The capital letter following the series year indicates that a minor change in design was authorized in a particular series. Such a change occurs when a Secretary of the Treasury or Treasurer of the United States is appointed and new signatures are required.

The series date indicates the year when the design of a particular note was originated, when a major revision was made to the note design, or when the manner of printing was changed. A minor revision in the design was indicated by the addition of a

letter to the series year. A change in one signature alone was regarded only as a minor revision. With the appointment of William E. Simon May 8, 1974 as Secretary of the Treasury, a change has been made to the previously established policy and the series year has been changed to the year of a new Secretary's appointment.

size of currency

Currency of the present size was first issued in July 1929, replacing the old, large notes. A finished note measures approximately 2.61 inches by 6.14 inches, and the thickness is .0043 inches. A million notes weigh approximately 2,000 pounds or slightly more than 490 notes per pound. New notes stack 233 to an inch, not compressed, and occupy approximately 42 cubic feet of space, with moderate pressure.

in God we trust

"In God We Trust" owes its presence on United States coins largely to the increased religious sentiment existing during the Civil War. Salmon P. Chase, then Secretary of the Treasury, received a number of appeals from devout persons throughout the country, urging that the Deity be recognized on our coins.

Accordingly, on November 20, 1861, Secretary Chase instructed the Director of the Mint at Philadelphia to prepare a motto "expressing... this national recognition." The Secretary wrote "No nation can be strong except in the strength of God, or safe except in His defense."

The approved form of the motto first made its appearance on the two-cent coin, authorized by Act of Congress dated April 22, 1864, but its use has not been uninterrupted. In 1866, the motto was introduced on

the double-eagle, eagle, and half-eagle gold coins and on the silver dollar, half-dollar, and quarter-dollar pieces. It was included in the nickel five-cent design from 1866 to 1883, when it was dropped and not restored until the introduction of the Jefferson nickel in 1938. The motto has been in continuous use on the cent since 1908 and on the dime since 1916.

A law passed by the 84th Congress and approved by the President on July 11, 1955, provided that "In God We Trust" shall appear on all United States paper currency and coins. One-dollar bills bearing the inscription were first made available to the public on October 1, 1957. As the Bureau of Engraving and Printing converted to the dry intaglio process of printing, the motto "In God We Trust" was gradually included in the back design of all classes and denominations of paper currency.

By Joint Resolution of the 84th Congress, approved by the President on July 30, 1956, "In God We Trust" was declared to be the national motto of the United States.

the \$ sign

The origin of the \$ sign has been variously accounted for, with perhaps the most widely accepted explanation being that it is the evolution of the Mexican or Spanish "P's" for pesos, or piastres, or pieces of eight. The theory, derived from a study of old manuscripts, is that the "S" gradually came to be written over the "P," developing a close equivalent of the \$ mark. It was widely used before the adoption of the United States dollar in 1785.

how money enters circulation

The supply of our coins is governed by demand as well as by the facilities available for their manufacture. Coins are made at

Philadelphia, Denver, and San Francisco. The Director of the Mint ships the coins to the 12 Federal Reserve banks and their 25 branch offices. These agencies, in turn, distribute coins to the commercial banking system throughout the country. The accounting procedure and further steps in distribution are the same as those described below for paper currency.

The distribution of paper currency is also made through the Federal Reserve banks and their branches, and by the United States Treasury.

24 Member banks of the Federal Reserve System carry their reserve accounts with the Federal Reserve bank of their district. When member banks need additional currency, they authorize the Federal Reserve bank to charge their reserve accounts and ship the currency. Usually, nonmember banks procure their currency through a correspondent member bank located in the same city as the Federal Reserve bank, or by arrangement whereby the currency is shipped direct to the nonmember bank with the reserve account of the correspondent bank being charged for the shipment.

To obtain Federal Reserve notes, a Federal Reserve bank applies to the Federal Reserve agent, a representative of the Board of Governors of the Federal Reserve System, who is located at the Reserve bank and who maintains a stock of unissued notes. In applying for notes, the bank must pledge with the agent the required collateral as described on page 7. United States Government securities are acquired by the Federal Reserve banks in open market operations. Eligible paper consists of short term notes, drafts, bills of exchange, or acceptances discounted or purchased by the Reserve banks.

destruction of unfit currency and coin

When paper currency becomes worn and no longer fit for general use, it is withdrawn from circulation, destroyed, and replaced by new notes. The worn out notes are destroyed by incineration or pulverization at Federal Reserve banks and branches throughout the country, and by the Department of the Treasury under procedures prescribed by the Treasury. The destruction process is not complete until the notes have been reduced to an unidentifiable residue so that no recovery of the notes and of the distinctive paper on which they are imprinted are possible.

Before being destroyed, the currency is verified under special internal control procedures as to genuineness, kind, value, and number of pieces. One-dollar bills make up the bulk of the currency which is retired because of unfitness. One-dollar bills normally last about 18 months and over 2 billion of them are in circulation. Higher-denomination bills last much longer.

Worn and unfit coins are withdrawn from circulation and returned to the Mints where they are melted down and the metal reused.

exchange of mutilated paper currency

Lawfully held paper currency of the United States which has been mutilated will be exchanged at its face amount if clearly more than one-half of the original whole note remains.

Fragments of mutilated currency which are not clearly more than one-half of the original whole note will be exchanged at face value only if the Treasury is satisfied that the missing portions have been totally des-

troyed. This judgment is based on such evidence of total destruction as is deemed necessary and is final.

No relief will be granted on account of paper currency of the United States which has been totally destroyed.

Correspondence regarding mutilated currency should be addressed to the Treasury Department, Bureau of Government Financial Operation, Division of Cost Series, Washington, D. C. 20226.

premiums on coins and currency

The Department of the Treasury does not pay a premium for old or rare coins and currency notes. Information regarding the numismatic value of coins and paper currency can best be obtained from coin dealers.

26 Notes issued by the Confederate states during the Civil War and those issued by the various states or state banks are not redeemable by the Department of the Treasury.

Foreign money is neither receivable nor redeemable by the United States.

legal tender properties of united states coins

In 1873, an Act of Congress (now codified in 31 U. S. Code 460) made minor coins legal tender for any amount not exceeding 25 cents in any one payment. An Act of June 9, 1879 (now codified in 31 U. S. Code 459) makes subsidiary silver coins of smaller denominations than \$1.00 legal tender in sums not exceeding \$10.00 "... in full payment of all dues public and private."

Under the above laws pennies and nickels are legal tender for debts not exceeding 25

cents, and dimes, quarters, and half dollars are legal tender for debts not exceeding \$10.00.

The most recent law dealing with legal tender is Section 102 of the Coinage Act of 1965, 79 Stat. 255, 31 U. S. Code 392 (re-enacting a similar provision in effect since 1933), which provides:

"All coins and currencies of the United States (including Federal Reserve notes and circulating notes of Federal Reserve banks and national banking associations), regardless of when coined or issued, shall be legal tender for all debts, public and private, public charges, taxes, duties, and dues."

It is not entirely clear whether the 1965 amendment by implication has modified or repealed the provisions of the 1873 and 1879 Acts imposing limitations on the use of coins as legal tender for debts. The 1965 statute makes all coins legal tender, but it does not expressly make all coins unlimited legal tender for debts. Rules of statutory interpretation indicate that the Acts of 1873 and 1879 are still in force, and the 1965 Act is in force. When a statute deals with a subject in general terms while another deals with part of the same subject in a more detailed way, if there is a conflict between the two, the more specific statute will prevail regardless of whether it was enacted before or after the general statute. Until the effects of the 1965 Act on the earlier statutes are the subject of a decision by a court of competent jurisdiction, a definitive answer can not be given.

regulations covering reproductions of coins, currency and other instruments

Printed reproductions of paper currency, checks, bonds, revenue stamps, and securities of the United States and foreign governments are permissible for numismatic, educational, historical, and newsworthy

purposes, but not for advertising except numismatic advertising.

However, there are two important printing restrictions: The illustrations of paper currency, checks, or bonds must be in black and white and must be less than three-fourths or more than one and one-half times the size of the genuine obligation. Illustrations must appear in articles, books, journals, newspapers, or albums, and no individual facsimiles of such obligations are permitted.

The plates and negatives, including glossy prints of paper currency, postage and revenue stamps, bonds and other obligations and securities, used in printing the illustrations in publications must be destroyed after their final use for the purpose for which they were made.

Motion picture films, microfilms, and slides of currency can be made in color or black and white for projection on a screen or for telecasting.

28

No prints or enlargements may be made from films unless they conform to the above restrictions.

Photographs or printed illustrations of United States and foreign coins may be used for any purpose, including advertising. The same is true for motion picture films and slides of coins.

gold and the U.S. monetary standard

The coinage of gold was authorized by the Act of April 2, 1792, which established the Mint and provided for a national coinage. Denominations ranging from one dollar through twenty dollars were manufactured at various times from 1795 through 1933. None have been struck since that date.

In the course of the last four decades, gold, including gold coins, has been substantially eliminated from the domestic monetary system. The Gold Reserve Act of 1934 ended the redemption of our currency in gold and prohibited the coinage of gold. In 1968 the remaining requirement that our currency have a percentage backing in gold was eliminated, and in 1971 the United States suspended the convertibility of foreign official dollar holdings into gold. Restrictions on gold ownership by U.S. citizens were removed on December 31, 1974.

Today, no country is on a domestic gold standard and only a few countries still retain some fractional gold reserve backing for their currencies. Agreement has been reached by the members of the International Monetary Fund on measures to reduce the international monetary role of gold. The declining monetary role for gold, both domestically and internationally, reflects the general recognition that gold is an unstable basis for a monetary system.

THE GREAT SEAL of the UNITED STATES

by

MAURY MAVERICK

The founding fathers of the United States were obviously looking toward far horizons when they depicted the eagle on one face of the Great Seal. But they were also conscious of the great heritage of civilization, and its birthplace—Egypt—when they depicted the pyramid on the other face, thus forging this link between the United States and Egypt.

ON June 20, 1782, the Great Seal of the United States was adopted by the Continental Congress at Philadelphia. The design was new, revolutionary, and truly American in composition, but contained very substantial portions which were of Egyptian background, including the pyramid. Final adoption came after six years of careful study and research under the difficult conditions of the American Revolution.

The first committee to design a Great Seal was appointed late in the day of July 4, 1776, after the adoption of the Declaration of Independence. The committee was composed of three able and scholarly men, Thomas Jefferson, John Adams, and Benjamin Franklin.

In the very first design of the first committee, Thomas Jefferson suggested ideas from the history of Egypt. The committee decided that the Seal was to have two sides, like



Maury Maverick
Of San Antonio, Texas

a coin or medal, and that proposal was followed, with the result that it is the only seal in the world having two sides.

John Adams suggested that one side depict the influence of Stoic ethics by having an image of Hercules represent strength and courage. Thomas Jefferson in his papers stated that he suggested that, in addition to the Egyptian design, shields or symbols of Western Euro-

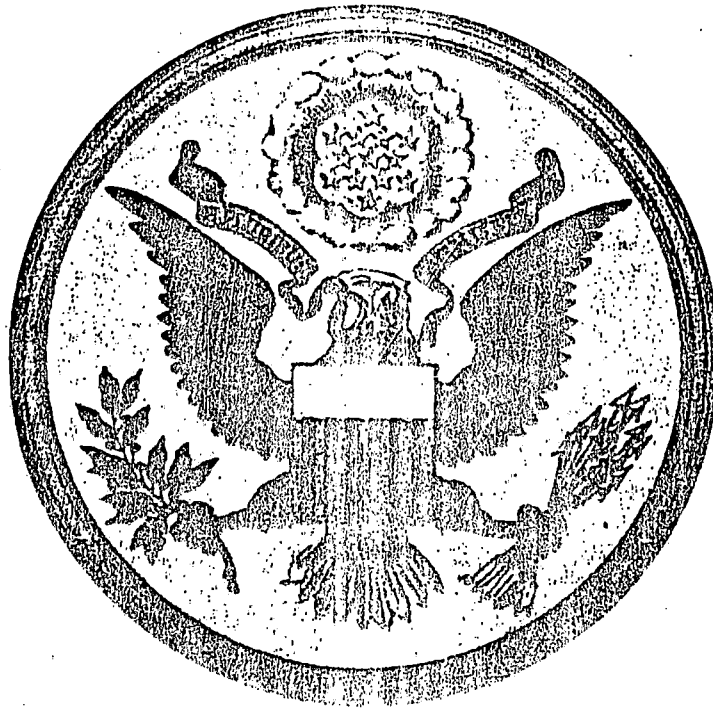
pean nations be used, with the scales of Justice, the cap of Liberty, and with the Eye of Providence above, and the words "E pluribus unum", and "1776", the last in Roman numerals.

Every design up to final adoption showed the spiritual above the material, a fact that might well be recalled today in the relations of the United States and the Middle East since the religious concepts of both areas of the world have much in common.

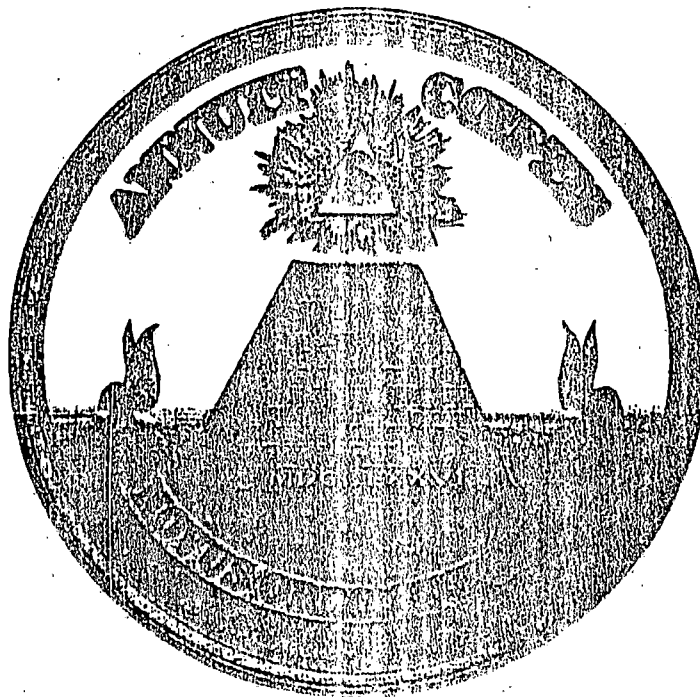
But the designs of the first committee were not even satisfactory to the group itself. Therefore, the matter was passed over by the Continental Congress. However, certain principal ideas of the first committee were included in the final seal. These include one Glory of Heliopolis, "City of the Sun" in Egypt, and another of an eye in a triangle, (also of Middle Eastern origin) together with the motto "E pluribus unum."

Three committees labored over the Great Seal designs over the six-year period during which time the symbols used were made perfectly clear, as shown by official documents. There are no "mystic" qualities about it.

A committee was appointed January 23, 1777, but its reports are lost. Then on March 25, 1780, the "Lovell

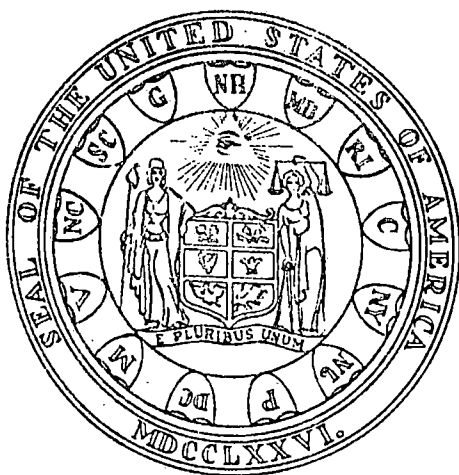


FACE



REVERSE

Painted by James L. Frazier,
Texas artist



First Seal Design—Face

Committee", usually called the Second Committee, was appointed. James Lovell of Massachusetts was chairman; John Morin Scott of Virginia, and William Churchill Houston of New Jersey were members. Lovell was a school teacher and a graduate of Harvard College. On May 10, 1780, the committee reported with other designs, still maintaining a symbol of the Glory with more mottos such as "Bello Vel Paci" ("Let there be war or Peace") and "Virtute Perennis", (approximately Virtue, or Strength Forever). The designs and ideas were not satisfactory and therefore not accepted by Congress.

The study of the Great Seal continued. Then in early May, 1782, the Third Committee was appointed. It included Arthur Middleton of South Carolina, Elias Boudinot of New Jersey, and Edward Rutledge of South Carolina. The two South Carolinians were of foreign education and were well-informed on British heraldry and the use of escutcheons and shields. Boudinot then had knowledge of coins and medals. He was later director of the Mint in Philadelphia.

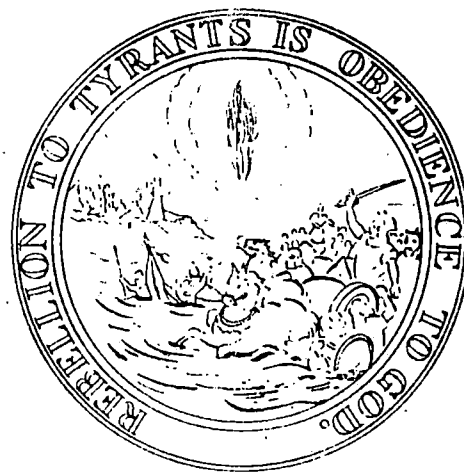
It is important to again emphasize that nowhere in the United States Great Seal was there included or intended any "mysticism", as some writers are ready to assert. One book which was used by the creators of the Seal for the definitions, coloring and design was "The Elements of

THE EAGLE OF DEMOCRACY

Above the "Eagle of Democracy" is a Glory (of God), a ring of light in gold. This indicates the spiritual above the material as well as civil freedoms. The tufted, or Prussian, eagle was once considered for the design but the "bald American" eagle was the one finally used. The eagle represents national sovereignty, and also indicates the negation of colonialism. Inside the Glory are thirteen stars, a "constellation" (thirteen letters) of States, representing the Thirteen Original States.

The top of the shield in blue represents Congress, free elections, representative democracy and justice. The best opinion in heraldry holds that the head of the bald eagle represents the Executive Branch. The rudder of the State, the nine tail feathers, represents the Judiciary. Thus the Executive, Legislative, and Judicial are united and complete, with a motto in the beak of the Eagle, *E Pluribus Unum*, (again thirteen letters, "out of many, one").

The vertical stripes, red and white, in the shield represent the first idea of a United Nations or United States. In the right talon of the Eagle are thirteen green olive leaves and seeds which always represented peace to the Chaldean, Judaic, Egyptian, and other Middle Eastern cultures. In the left claw are thirteen arrows, of American Indian origin, symbolizing war. The head of the American Eagle always turns toward the olives, indicating a desire for peace, even during war; but the arrows represent war as a national instrument of power.



First Seal Design—Reverse

Heraldry", by Professor Mark Anthony Pory of Eton College, published in London, 1765. Its contents are referred to and explained in some detail for the first time in this article. In definitions and descriptions, in the Statute adopting the Seal, exact words and directions are taken directly from this book, as well as the colors or "tinctures" and designs. This is not a matter of conjecture, as the use of the book is clearly established by correspondence still in existence, and by exact comparisons. All of the material here referred to, with original drawings and reports, is in the Library of Congress, Washington, D. C.

The Pory work is an exposition of British or Western heraldry and states in the very beginning that heraldry originated through the Egyptians, and "their Hieroglyphics." Throughout the book, the Egyptian origin of heraldry is emphasized. This British book shows a chart of races or nations with their heraldic use of birds and animals, the Egyptians being indicated as original or first, and that their designs included the Eagle. But the Seal adopted went beyond Western heraldry with the independent adoption of the pyramid, making it the only seal in the world using it.

It is well known that not only Jefferson and Adams but nearly all members of the various committees con-

cerned with the Seal were versed in foreign languages and their interest in Egypt had developed from reading Herodotus, Pliny, Plutarch, and other ancient writers who had discussed Egypt, its history and culture.

The third committee received the aid of William Barton, M.A., the son of an Episcopal minister. Barton was an authority on heraldry who owned a copy of "The Elements of Heraldry". He suggested two very elaborate and complicated designs, one of which contains the incomplete pyramid which was adopted. Finally, out of all the designs, the Great Seal of the United States was assembled and simplified by Charles Thompson, secretary of Congress, presented to Congress, and adopted with descriptions and explanations.

THE PYRAMID OF PROGRESS

The Egyptian influence in the design can be noted in the pyramid or "mastaba" ("mastaba" is an Arabic word which means a raised tribune but which to Western minds means an incomplete pyramid) which represents the "Solid Strength and Duration" as stated in the law adopted by Congress. The Eye of Providence, or the "All-Seeing Eye" within a Glory, also of Middle Eastern origin, is above the pyramid and indicates the spiritual above the material. The Eye also indicates education, and freedom of knowledge. The words "Annuit Coeptis" (thirteen letters) mean "God has favored our Undertakings" or "Enterprise."

The unfinished pyramid means that the United States will always build, grow, improve, with a continuous evaluation of Truth. The thirteen layers of the pyramid refer to the Thirteen States, and the rights of States. The separate stones represent local self-government. At the bottom are the words "Novus Ordo Seclorum", meaning the "New Order of the Ages", beginning in 1776.

Many of the words and symbols

are in "thirteens", because of the original Thirteen States.

The clear meanings of these symbols were then and now: The Law, the supremacy of the spiritual above the material, and the rights of the individual. These are integral parts of the ideals, philosophy, and religion of the Islamic, Christian, and Judaic scriptures. This unity of ideals, and specifically the meaning of the Great Seal itself, plead affirmatively and positively for the freedom of peoples, and the independence of all nations from imperialism, colonialism, or totalitarianism.

The Christian Bible says, "Be not overcome of evil, but overcome evil with good." ROMANS 12:21. In the Koran one reads, "Repel evil with that which is best." S. XXXII:96.

The Great Seal is on every United States paper dollar and is also affixed to all important commissions signed by the President, on treaties, and on the "exequaturs" of foreign consuls. The Eagle side is displayed on the Congressional Record in black and white, and in colors at our foreign offices overseas. It also is on the cap of every enlisted man of the United States Army and Air Force.



Maury Maverick is a San Antonio, Texas, lawyer who served as a member of the House of Representatives in the 74th and 75th Congresses of the United States and was formerly Mayor of San Antonio, Texas. Mr. Maverick has made a study of the Great Seal over a period of many years and is a student of Middle Eastern and Far Eastern cultural affairs.



DEPARTMENT OF THE TREASURY

BUREAU OF ENGRAVING AND PRINTING

WASHINGTON, D.C. 20228

THE STORY OF MONEY

"What shall we use for money?"

A very modern question, also a very old one. It was one of the greatest hindrances to early trade. In ancient times, when men first began to buy and sell, what to use for money was a big question.

Even before history began to be recorded, perhaps before there was even any thought of such things as banks or money, the need existed for a medium of exchange--for something to use for money.

In the time of the poet Homer, who wrote the story of the ten years' war of Troy, oxen were measured of value. A suit of golden armor was worth a hundred oxen. That was 900 years before the birth of Christ. In ancient Crete, sheep were money, and the ancient Jews measured wealth in flocks and herds. The natives of the island of Yap, in the Pacific Ocean, even in recent times, used large stone wheels for money. Our own American Indians used bead work, made of shells, called wampum. This was used for money by colonial Americans until they themselves got to making it so cheaply that it lost its value as a medium of exchange. Lacking metal or paper money, they used not only wampum but beaver skins, grain, and other staples. Tobacco was money in Virginia for more than a hundred years. Cloth, salt, hides, nearly anything that could be traded, has had a turn at being used for money.

Metals were used for money in ancient Egypt as early as 2500 B.C. In 2100 B.C. cubes of gold were money in China. The Old Testament (Genesis 23:16) tells of merchants using gold and silver bullion for money: "Abraham weighed unto Ephron 400 shekels of silver, current money with the merchant." It was to pay for a burial place for Abraham's family. This was about 3600 years ago. Babylonian records show that about 550 B.C. the temples were also the banks, took money on deposit, and lent it at interest.

The first coiners of gold and silver known to history were the Lydians, in Asia Minor. The name of their king, Croesus, became a synonym for great wealth. This was about 550 B.C. The Greeks learned coinage from Lydia, and the art was taken to Rome from Greece. Metal money in ancient times was coined as it is now, by means of dies or stamps. Grecian coins were the best minted and most beautiful of ancient times.

The Chinese were using paper money when Marco Polo visited their country in the thirteenth century. From him we know that the Emperor Kubla Khan, as early as 1273 A.D., issued notes printed on mulberry paper. Each was stamped with the red seal of Kubla, and signed by his treasurers. Counterfeiting then was punished by the headman's sword.

-CONTINUED-

THE STORY OF MONEY (continued)

The oldest paper money of which a specimen is known to exist is the "Kwan" note, first issued in China in 1368 A.D. It was 8 1/2 by 13 1/2 inches, or as wide and a little longer than a sheet of typewriter paper.

Paper money in Europe grew out of the use of letters of credit, which were used in China centuries earlier, and for the same reason--robbers. Metal money was what the robbers wanted, not pieces of paper that no one would cash for them.

The first counterfeiter of minted money is said to have been the Emperor Nero. Since his time counterfeiting has flourished in many nations. United States courts convict scores of persons on charges of counterfeiting yearly on evidence obtained by the Secret Service.

In the early days of our Nation, before United States money was issued, there were in circulation English shillings, French Louisdors, and Spanish doubloons, with other units of the money of those nations. This caused confusion and slowed up trade. The dollar was adopted by the Congress in 1785 as the unit of our money, and the decimal system as the method of reckoning. In 1792 the United States monetary system was established, and the United States Mint began coining money at Philadelphia. The first coins minted were handed to the President's wife, Martha Washington, by the Director of the Mint, David Rittenhouse. This ceremony took place in 1792; the day is not recorded. The coins were half-dimes made from household silver sent from Mount Vernon by President Washington. These half-dimes were not put in circulation. The issue was presented to President Washington by Act of Congress; he gave them to his friends as souvenirs. Besides half-dimes, the Congress authorized the issuance of the other metal units of our currency, to be minted from gold, silver, nickel, and copper.

Paper currency was used by our people even before the Declaration of Independence was signed. It was called Continental currency. Its value became so small that "Not worth a Continental" was a common saying. The plates for the first of this money was engraved in 1775 by Paul Revere, who made the famous midnight ride. Paper money also was used after the adoption of the Constitution in 1789. It was not Federal currency but bank notes. Before 1836 these notes were issued by two United States banks established by the Congress. The first bank was closed in 1811, the second in 1836. After 1836, the chief form of paper currency was notes issued by banks operating under charters from the States.

The present system of United States paper money began with the Civil War. Treasury notes were issued under the Act of July 17 and August 5, 1861. The National Bank Act of 1864 provided for national bank notes, issued with United States bonds as security; an amendment in 1908 permitted national bank notes on security other than United States Bonds. National bank notes have been in process of retirement since March 1935. Our paper currency took its final form with the adoption of the Federal Reserve Act, December 23, 1913. The first issue of Federal Reserve notes was made on November 16, 1914, with the opening of the Federal Reserve banks.

ntended to do, he replied, "If a
d knew, I would pluck it out."

☞ ☞

in (1936–), Indian-born con-
r of the Los Angeles Philhar-
a from 1961 to 1976, he became
New York Philharmonic Or-
and since 1968 has also been
o the Israel Philharmonic Or-

h orchestra gave him the most
luct, Mehta tactfully refused to
rticular favorite. "What would
m answer as to which of his
red?" he reasoned. "One can
about details only — a dimple
ere."

☞ ☞

1898–1978), Israeli stateswo-
ussia, educated in the United
founding member of the Israeli
nd its secretary general (1966–
prime minister of Israel in
d in 1974 after the first Arab-

negotiations with the Arabs,
ed on meeting her opponents
journalist suggested that this
y. "Even divorces are arranged
l confrontation," he argued.
ed in a divorce," retorted Mrs.
sted in a marriage."

Nixon tells the following

ughter, Julie Eisenhower, in-
leir for her book, *Special Peo-*
w it had felt to be appointed
oreign minister in 1956. [Mrs.
characteristic. 'I don't know,'
ile. 'I was never a man minis-

ter Nixon had nominated
s US secretary of state he had
olda Meir. Nixon observed
w had Jewish foreign minis-
Mrs. Meir, and then with Kis-
ccent in mind, added, "But
ish."

The liberal views of Robert Montgom-
ery, professor of economics at the Uni-
versity of Texas, made him unpopular
with the Texas legislature. An investi-
gation was set in motion. When he
was asked if he favored private prop-
erty, Montgomery replied, "I do — so
strongly that I want everyone in Texas to
have some."

—John Kenneth Galbraith,
A Life in Our Times

MELBA, Dame Nellie [Helen Porter Arm-
strong, née Mitchell] (1861–1931), Australian
opera singer. She derived her stage name from
her native city of Melbourne. During her long
career (1887–1926) she enjoyed worldwide
fame for her interpretation of the grand opera
soprano roles.

1 According to the traditional account, the
invention of Melba toast was an accident.
While Dame Nellie Melba was staying at the
Savoy Hotel in London, whoever prepared the
star's toast left it too long in the oven and it was
brought to her in a thin, dried-up, fragile state.
When the maître d'hôtel hastened to apolo-
gize, Dame Nellie cut him short, saying the
toast was delicious.

2 Opera, in the days before World War I, was
often a much more emotional experience than
it became in later years. Nellie Melba played
Desdemona so heartrendingly during tours of
America that many women in the audience
burst into tears when she was strangled by
Otello. If the applause was particularly persis-
tent, Nellie would rise from her deathbed and
signal for a piano to be brought on to the stage.
She would then accompany herself for an en-
core by singing *Home, Sweet Home*, with the
audience joining in. When the ovation follow-
ing the encore died down, she would collapse
again upon the bed and the unfortunate Otello
was allowed to finish the act.

☞ ☞

MELBOURNE, William Lamb, 2d Viscount
(1779–1848), British statesman; prime minister
(1834, 1835–41). He served as secretary for

Ireland (1827–28). As home secretary (1830–
34) he dealt sternly with labor unrest and threats
to the Constitution. He was an important influ-
ence upon Queen Victoria in the early years of
her reign. His wife, Caroline, had a well-publi-
cized affair (1812–13) with Lord Byron.

1 In Dublin as secretary for Ireland, Lamb
very quickly assessed the way in which the gov-
ernment there worked and was regarded by the
Irish. The young son of one of his subordinates
came in to be shown the office one day. "Is
there anything here you would like?" asked
Lamb, gesturing toward the top of his desk.
The child selected a stick of official red sealing
wax. "Quite right, my boy," said the secretary
for Ireland, pressing some pens into his hand as
well, "begin life early. All the things here be-
long to the public, and it's your business to get
as much out of the public as you can."

2 Lord Melbourne had a strong distaste for
religious zeal. Having been forced to sit
through an evangelical sermon on the conse-
quences of sin, he grumbled, "Things have
come to a pretty pass when religion is allowed
to invade private life."

3 Melbourne also had little patience with the
ecclesiastical squabbles of the day and fre-
quently ran into difficulties over the appoint-
ment of bishops, particularly as he favored the
more liberal theologians in the church hierar-
chy. Consequently, he was distressed when the
death of a bishop entailed a vacancy in the
House of Lords which it was the prime minis-
ter's duty to fill. "Damn it! Another bishop
dead! I think they die just to vex me."

4 When the death in 1832 of the poet George
Crabbe was announced, Lord Melbourne ob-
served, "I am always glad when one of these
fellows dies, for then I know I have the whole
of him on my shelf."

☞ ☞

MELLON, Andrew William (1855–1937), US
financier, secretary of the Treasury, art collec-
tor, and philanthropist.

1 (The writer Lucius Beebe recalls a breakfast
at the Mellon establishment.)

"The old man was very fond of thin little hot
cakes and sausages, and their service was ritual.

One morning in the midst of their presentation, one at a time by the day footman, another lackey brought in the telephone on a cord and announced that the Minister of Finance of France wished to speak with Mr. Mellon on the transocean. 'Not with the hot cakes,' said the old gentleman testily. . . . 'These foreigners have no sense of propriety.'"



MELVILLE, Herman (1819–91), *US novelist*. His experiences as a member of the crew of a whaler in the 1840s are the basis of his tales of adventure in the South Seas—*Typee* (1846), *Omoo* (1847), *Mardi* (1849), *White-Jacket* (1850), and his masterpiece, *Moby-Dick* (1851).

1 On a visit one evening to Nathaniel Hawthorne and his wife, Melville told them a story of a fight he had witnessed on an island in the South Seas, in which one of the Polynesian warriors had wreaked havoc among his foes with a heavy club. Striding about the room, Melville demonstrated the feats of valor and the desperate drama of the battle. After he had gone, Mrs. Hawthorne thought she remembered that he had left empty-handed, and wondered, "Where is that club with which Mr. Melville was laying about him so?" Mr. Hawthorne maintained that he must have taken it with him, and indeed a search of the room revealed nothing. The next time they saw him they asked him what had happened to the club. It turned out that there was no club; it had simply been a figment of their imagination, conjured up by the vividness of Melville's narrative.



MENCKEN, H[enry] L[ouis] (1880–1956), *US critic and journalist*. As editor of *The Smart Set* (1914–23) and the *American Mercury* (1924–33), he was influential in promoting the work of many young American writers. His iconoclastic wit and contagious disrespect for a variety of sacred cows gave the mortal blow to the Genteel Tradition.

1 As editor of *The Smart Set*, Mencken gave help and publicity to Joseph Conrad at a time when he was virtually unknown in the United States. After Conrad had become an estab-

lished writer, Mencken wrote to him to ask for a story, adding that he would be grateful to have it as cheaply as possible in view of the magazine's tight budget. Months passed and then Conrad's agent wrote to say that Conrad had a story ready—fee \$600. Mencken cabled back: "For \$600 you can have *The Smart Set*."

2 Mencken was scandalized by the gambling losses incurred by members of the Algonquin Round Table set. After Robert Sherwood had had a particularly costly evening, Mencken commented glumly, "None but the brave *chemin de fer*."

3 (In 1948 Mencken suffered a stroke that crippled his mental faculties for the remainder of his life. Alistair Cooke recalls a visit to him in 1955.)

"He asked how the food was these days at Luchow's, and that brought on memories of various literati of the *Smart Set* days, and of his particular affection for Edgar Lee Masters. He talked of him in the past tense, and I asked how long Masters had been dead. He was puzzled for a moment, and I suggested something like 1948. Said Mencken with no guile at all, 'That's right, I believe he died the year I did.'"

4 Mencken coined his own epitaph: "If after I depart this vale, you ever remember me and have thought to please my ghost, forgive some sinner and wink your eye at some homely girl." (It was engraved on a plaque in the lobby of the *Baltimore Sun* building.)



MENELIK II (1844–1913), *emperor of Ethiopia* (1889–1913). During his reign he carried out a number of important reforms; in 1896 he released Ethiopia from Italian domination.

1 In the late nineteenth century, news of the success of the electric chair as a means of dispatching criminals reached Ethiopia; Menelik II eagerly ordered one. When it arrived, however, he was disappointed to find that it did not work: no one had warned him that Ethiopia's lack of electricity would be a problem. The criminals of the nation sighed with relief and the emperor, anxious that his new acquisition should not go to waste, had the chair converted into a throne.

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roposed that, instead of
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ach have one man at its

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He had strongly advised
Jefferson and Randolph,
ot told until the day be-
r confirmation.

With a confidence more ingenuous than arrogant, Hamilton was optimistic about his ability to fulfill his gargantuan task in the allotted time. In a letter to Lafayette about his cabinet appointment, he said there was "a reasonable expectation" to satisfy the public if "I am properly supported by the Legislature, and in this respect I stand at present in the most encouraging footing." The debt due to France "will be among the first objects of my attention." He would prefer it if the installments on the principal of the debt could be suspended for a few years, "a valuable accommodation for the United States," Hamilton urged. Of course, the arrears of interest and future interest would be paid punctually. "It would be best if the offer came unsolicited from France as a fresh mark of good will," the new secretary suggested.⁴

At this time, neither Hamilton nor Madison realized consciously that their friendship was beginning to sour. Madison had been behind the plan to subjugate Hamilton to the power of the House of Representatives by forcing him to present a program for the restoration of the economic health of the nation directly to that body. And when Hamilton was in office about a month, he had the opportunity to challenge Madison's position as Washington's chief adviser.

Under the leadership of Madison, Congress had retaliated against Great Britain for a series of unfriendly acts, including limiting American trade with the West Indies and refusing to evacuate the western forts. Hamilton, acting independently, talked to George Beckwith, England's unofficial representative, about these problems.

Washington, much perturbed over the state of Anglo-American commercial relations and the failure of England to send a minister to the United States, decided to send a special envoy to Great Britain. Both Madison and Jay, then acting as secretary of foreign affairs, were asked to recommend someone. Madison responded with a barrage of arguments that delayed the president's decision for a week. Hamilton, who approved the Washington plan, suggested Gouverneur Morris, an anglophile and a Hamiltonian.

Washington should wait until Jefferson's return from France before appointing an agent for the English mission, Madison maintained. Delaying just long enough to appease Madison, Washington appointed Morris to the post. Nonetheless, appearances were maintained. Hamilton wrote to Madison in October, asking him what taxes would be "least unpopular." Madison blamed the tardiness of his reply—not until November—on a long illness from which he had just recovered. He recommended: a tax on home stills, an increase in

duty on imported liquors, a land tax and a stamp tax on the proceedings of the federal courts.⁵ This was one of the last pleasant exchanges between the two men.

During the three months that Congress was absent from New York, Hamilton devoted himself to organizing his department, acquainting his staff with the standards of excellence he demanded from them and building a structure for the Treasury Department that would stand during his tenure and afterward. No detail was too small for his attention. His goal was a sound economy that would restore the floundering young nation permanently to financial stability.

"Tomorrow I open the budget & you may imagine that today I am very busy and very anxious," Hamilton wrote on January 7, 1790, to his sympathetic, affectionate sister-in-law, Angelica Church, who had returned to England in November. The secretary of the treasury had labored arduously, employing his amazing powers of concentration. He was aware that his enemies were ready to stop him before he got started; his friends were counting on him; and the speculators, foreign and domestic, were waiting to benefit from the plan. Even Hamilton's friends were kept in the dark about the system being developed. To Henry Lee, who had inquired about it prematurely, Hamilton wrote politely that he must be as discreet as Caesar's wife, as must "every man concerned in the administration of the finances of a Country. . . ."⁶

Though Congress had ruled that department heads could not appear before them in person, some efforts were made by Hamilton's friends to make an exception for him. Elias Boudinot suggested that the secretary of the treasury be present in the House in order to answer questions on a subject that was "so intricate" it would not be easily comprehended "without oral illustration."⁷ Congress refused to change its mind.

Hamilton wrote that the document he was presenting was "the result of his enquiries and reflections" on making "an adequate provision for the support of Public Credit," as requested. The debt of the United States, "the price of liberty," had not been settled in the first seven years since independence due to "the embarrassment of a defective constitution." Now the obligation would be taken care of, and it would be seen that the benefits of public credit were various and obvious. Hamilton listed several: the extension of trade; promotion of agriculture and manufactures; and the lowering of the interest rate, which would make borrowing easier and cheaper.

the day, at sunset, in bright and gray weather, in sun and mist. They were no more religious in content than the "Haystacks" were rustic. The architectural screen of the worn facade served, like the spongy fabric of the stacks, as an armature, pulverized by sun or drowned in mist, on which to hang an iridescent curtain of light.

Last years. After 1900, two ambitious projects, both far from Giverny, concluded Monet's search for new motifs. The first (for which he made at least three trips to London between 1899 and 1904) was the extensive, multiple series representing the Thames River, the Waterloo and Charing Cross bridges, and the House of Parliament. Recalling, in their exotic coloration and mysterious, romantic mood, the Thames paintings of Turner and Whistler, it is atmosphere, more than structures, that is the subject; buildings and bridges are less tangible than the pulsating brush strokes that give volume to the light-filled fog and mist. The second and last of the architectural motifs was the canals and palaces of Venice. They were begun in 1908 and continued in 1909, although Monet worked on the series at Giverny until 1912. Venice was a perfect Impressionist subject, but the light, water, movement, architecture, and reflections in the water are more generalized than the specific weather effects of the systemic "Haystacks" and "Cathedrals."

In 1890 Monet had bought a strip of marshland across the road from his house and flower garden, through which flowed a tributary of the Epte. By diverting this stream, he began to construct his now world-renowned water-lily garden. Soon weeping willows, iris, and bamboo grew around a free-form pool, clusters of lily pads and blossoms floated on the quiet water, and a Japanese bridge closed the composition at one end. By 1900 this unique product of Monet's imagination (for his Impressionism had become more subjective) was in itself a major work of environmental art—an exotic lotus land within which he was to meditate and paint for over 20 years. The first canvases of lilies, water, and the Japanese bridge were only about one yard square, but their unprecedented open composition, with the large blossoms and pads suspended as if in space, and the azure water in which clouds were reflected, implied an encompassing environment beyond the frame. This concept of embracing spatiality, new to the history of painting and only implicit in the first water-lily paintings, was expanded by 1925 into a cycle of huge murals to be installed in Paris in two 80-foot oval rooms in the Orangerie of the Tuileries. These were described in 1952 by the painter André Masson as "the Sistine Chapel of Impressionism." This crowning achievement of Monet's long, probing study of nature—his striving to render his impressions, as he said, "in the face of the most fugitive effects"—was not dedicated until 1927, more than a year after his death. The many large studies for the Orangerie murals, as well as other unprecedented and unique works painted in the water garden between 1916 and 1925, were almost unknown until the 1950s but are now distributed throughout the major private collections and museums of the world. Among these is a bequest made to the Musée Marmottan, Paris, by Monet's son Michel and opened to the public in 1971. Despite failing eyesight, Monet continued to paint almost until his death in Giverny, on December 5, 1926.

MAJOR WORKS

"Still Life" (c. 1859; Leigh B. Block collection, Chicago); "Farm in Normandy" (c. 1864; Louvre, Paris); "View of the Coast at Le Havre" (1865; Minneapolis Institute of Arts, Minnesota); "Camille (The Green Dress)" (1866; Kunsthalle, Bremen, West Germany); "Garden of the Princess, Paris" (1866; Oberlin College, Ohio); "The Terrace at Sainte-Adresse" (1866; Metropolitan Museum of Art, New York); "Women in the Garden" (1866-67; Louvre, Paris); "The River" (1868; Art Institute of Chicago); "La Grenouillère" (1869; Metropolitan Museum of Art, New York); "The Beach at Trouville" (1870; Tate Gallery, London); "Hyde Park, London" (1871; Philadelphia Museum of Art); "The Thames and the Houses of Parliament" (1871; Lord Astor of Hever collection, London); "Impression: Fog" (1872; Musée Marmottan, Paris); "Impression: Sunrise" (1872; Musée Marmottan, Paris); "Wild Poppies" (1873; Louvre, Paris);

"The Railroad Bridge at Argenteuil" (1875; Philadelphia Museum of Art); "La Japonaise" (1876; Museum of Fine Arts, Boston); "Gare Saint-Lazare, Paris" (1877; Fogg Museum of Art, Harvard University); "Rue Montorquiel Bedecked with Flags" (1878; Musée des Beaux-Arts, Rouen); "Vetheuil in Summer" (1880; Metropolitan Museum of Art, New York); "Haystacks at Giverny" (1884; Josef Rosensaft collection, New York); "Antibes" (1888; Toledo Museum of Art, Ohio); "Two Haystacks" (1891; Art Institute of Chicago); "Rouen Cathedral, Sunset" (1894; Museum of Fine Arts, Boston); "Water-Lily Pool" (1899-1906; Louvre, Paris); "Les Nymphéas" series (1906-26; Jeu de Paume, Paris).

BIBLIOGRAPHY. No *oeuvre* catalog or definitive biography of Monet exists. A volume purporting to fill the latter need, by CHARLES MERRILL MOUNT, *Monet: A Biography*, appeared in 1967. Its account of Monet's life is distorted and prejudiced. The author, however, presents some new and important documentation of Monet's early life and especially of his relationship with his mistress and first wife, Camille Doncieux. Indispensable for the study of Monet, as for other Impressionist painters, is JOHN REWALD, *History of Impressionism*, rev. ed. (1962). It includes copious notes, with references to publications, problems, and documents, and an exhaustive annotated bibliography. WILLIAM C. SEITZ, *Claude Monet* (1960), is a most useful recent book, including colour reproductions and an extensive outline biography. Among the books published during Monet's lifetime, perhaps that by Monet's friend GUSTAVE GEFFROY, *Claude Monet, sa vie, son temps, son oeuvre* (1922), is the most rewarding. See also GEORGE HEARD HAMILTON, *Claude Monet's Paintings of Rouen Cathedral* (1960); and for an account of the water garden, including photographs, STEPHEN GWYNN, *Claude Monet and His Garden* (1934).

(W.C.Se.)

Money

The subject of money has fascinated wise men from the time of Aristotle to the present day because it is so full of mystery and paradox. The piece of paper labelled one dollar or 100 francs or 10 kroner or 1,000 yen is little different, as paper, from a piece of the same size torn from a newspaper or magazine, yet it will enable its bearer to command some measure of food, drink, clothing, and the remaining goods of life while the other is fit only to light the fire. Whence the difference? Why should these particular pieces of paper be accepted in transactions for goods and services?

The easy answer, and the right one, is that people accept money as such because they know that others will. The pieces of paper are valuable because everyone thinks they are, and everyone thinks they are because in his experience they always have been. At bottom money is, then, a social convention, but a convention of uncommon strength that people will abide by even under extreme provocation. The strength of the convention is, of course, what enables governments to profit by inflating the currency. But it is not indestructible. When great variations occur in the quantity of these pieces of paper—as they have during and after wars—they may be seen to be, after all, no more than pieces of paper. People will then seek substitutes—like the cigarettes and cognac, which for a time became the medium of exchange in Germany after World War II. As John Stuart Mill wrote:

There cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money; except in the character of a contrivance for sparing time and labour. It is a machinery for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it: and like many other kinds of machinery, it only exerts a distinct and independent influence of its own when it gets out of order. (*Principles of Political Economy*, W.J. Ashley [ed.], 1909, p. 488.)

Mill was perfectly correct although one must add that there is hardly a contrivance man possesses that can do more damage to a society when it goes wrong.

The basic function that money performs is to enable buying to be separated from selling, thus permitting trade to take place without the so-called double coincidence of barter. If a person has something to sell and wants something else in return, he does not have to search for someone able and willing to make the desired exchange of items. He can sell what he has for general purchasing

The basic function of money

power—that is, “money”—to anyone who wants to buy it; he can then use the proceeds to buy what he wants from anyone who wants to sell it.

The importance of this function of money is dramatically illustrated by the experience of Germany just after World War II, when paper money was rendered largely useless because, despite inflationary conditions, price controls were effectively enforced by the American, French, and British armies of occupation. People had to resort to barter or to inefficient money substitutes. The result was to cut total output of the economy in half. The German “economic miracle” just after 1948 reflected partly a currency reform by the occupation authorities, but some economists hold that it stemmed primarily from the German government’s elimination of all price controls, thereby permitting a money economy to replace a barter economy.

Separation of the act of sale from the act of purchase requires the existence of something that will be generally accepted in payment—this is the “medium of exchange” function of money. But also, there must be something that can serve as a temporary abode of purchasing power, in which the seller holds the proceeds in the interim between his sale and his subsequent purchase, or from which the buyer can extract the general purchasing power with which he pays for what he buys. This is the “asset” function of money.

VARIETIES OF MONEY

Anything can serve as money that habit or social convention and successful experience endow with the quality of general acceptability, and a very wide range of items have so served—from the wampum (beads made from shells) of American Indians to cowries (brightly coloured shells) in India, to whales’ teeth among the Fijians, to tobacco among early colonists in North America, to large stone disks on the Pacific island of Yap, and to cigarettes and liquor in post-World War II Germany. The wide use of cattle as money in primitive times survives in the word *pecuniary*, which comes from the Latin word *pecus*, meaning cattle.

Metallic money. The use of metals as money has occurred throughout history. As Aristotle observed,

The various necessities of life are not easily carried about, and hence man agreed to employ in their dealings with each other something which was intrinsically useful and easily applicable to the purposes of life, for example, iron, silver, and the like. Of this the value was at first measured by size and weight, but in process of time they put a stamp upon it, to save the trouble of weighing and to mark the value.

The use of metal for money can be traced back to over 2,000 years before the birth of Christ. But standardization and certification in the form of coinage, as referred to by Aristotle, did not occur except perhaps in isolated instances until the beginning of the 7th century BC. Historians generally assign to Lydia, a Greek state in Asia Minor, priority in using coined money. The first coins were made of electrum, a natural mixture of gold and silver, and were crude, bean-shaped ingots bearing a primitive punchmark certifying to either weight or fineness, or perhaps both.

Debasing
the
currency

The use of coins enabled payment to be by “tale” or count rather than weight, greatly facilitating commerce. But this in turn encouraged clipping (shaving off tiny slivers from the sides or edges of coins) and sweating (shaking a bunch of coins together in a leather bag and collecting the dust that was thereby knocked off) in the hope of passing on the lighter coin at its face value. Gresham’s law (that “bad money drives out good” when there is a fixed rate of exchange between them) came into operation, and heavy, good coins were held for their metallic value, while light coins were passed on. The coins became lighter and lighter, and prices higher and higher. Then payment by weight would be resumed for large transactions, and there would be pressure for recoinage. These particular defects were largely ended by the “milling” of coins (making serrations around the circumference of a coin), which began in the late 17th century.

A more serious matter was the attempt by the sovereign to benefit from his monopoly of coinage. In this respect, Greek and Roman experience offers an interesting contrast. Though Solon, on taking office in Athens in 594 BC, did institute a partial debasement of the currency, for the next four centuries, until the absorption of Greece into the Roman Empire, the Athenian *drachma* had an almost constant silver content (67 grains of fine silver until Alexander, 65 grains thereafter) and became the standard coin of trade in Greece and in much of Asia and Europe as well. Even after the Roman conquest, the *drachma* continued to be minted and widely used.

The Roman experience was very different. Not long after the silver *denarius* patterned after the Greek *drachma* was introduced (in 269 BC), the prior copper coinage (*aes* or *libra*) began to be debased until by the time the Empire began its weight had been reduced from one pound to half an ounce. The silver *denarius* and the gold *aureus* (introduced about 87 BC) suffered only minor debasement until the time of Nero (54 AD), when almost continuous tampering with the coinage began. The metal content of the gold and silver coins was reduced, and the proportion of alloy was increased to three-fourths or more of its weight. Debasement in Rome (as ever since) was a reflection of the state’s inability or unwillingness to finance its expenditures “through explicit taxes.” But the debasement in turn worsened Rome’s economic situation and undoubtedly contributed to the collapse of the empire.

Paper money. In the late 18th and early 19th centuries, paper money and bank notes spread widely. The bulk of the money in use came to consist not of actual gold or silver but of fiduciary money—promises to pay specified amounts of gold and silver. These promises were initially issued by private individuals or companies as bank notes or transferrable book entries that have come to be called deposits. But gradually the state assumed an increasing role.

From fiduciary paper money promising to pay gold or silver, it is a short step to fiat paper money—that is, notes that are issued on the “fiat” of the sovereign, are specified to be so many dollars or francs or yen and are legal tender but are not promises to pay something else. The first large-scale issue in Western countries occurred in France in the early 18th century (though there are reports of paper money in China many centuries earlier). Later, the French revolutionary government issued paper money in the form of *assignats* from 1789 to 1796. The American colonies and later the Continental Congress issued bills of credit that could be used in making payments. These early experiments gave fiat money a deservedly bad name. The money was overissued, and prices rose drastically until the money became worthless or was redeemed in metallic money (or promises to pay metallic money) at a small fraction of its initial value.

Subsequent issues of fiat money in the major countries during the 19th century were temporary departures from a metallic standard. In Britain, for example, payment of gold for the outstanding bank notes was “suspended” during the Napoleonic Wars (1797–1816). As a result, gold coin and bullion became more expensive in terms of paper. Similarly, in the U.S. during the Civil War, convertibility of Union currency (greenbacks) into specie was suspended and resumption did not occur until 1879. At its peak, in 1864, the greenback price of gold, nominally equivalent to \$100, reached over \$250.

In the Middle Ages, when money consisted primarily of coins, silver and gold coins circulated simultaneously. As governments came increasingly to take over the coinage, and especially as fiduciary money was introduced, they tended to specify their nominal monetary units in terms of fixed weights of both silver and gold—to adopt a national bimetallic standard. Gresham’s law, however, usually assured that the bimetallic standard degenerated into a monometallic standard: if the quantity of silver designated as the monetary equivalent of one ounce of gold was less than the quantity that could be purchased in the market for one ounce of gold; i.e., if the mint overvalued silver, no one would bring gold to be coined. If he had gold, it was better to buy silver and bring it to be coined.

Silver, the cheaper metal, "drove out" gold and became the standard. This happened in most of the countries of Europe, so that by the early 19th century all were effectively on a silver standard. In Britain, on the other hand, the ratio established in the 18th century at the advice of Sir Isaac Newton, then serving as master of the mint, overvalued gold and therefore led to an effective gold standard. In the United States, a ratio of 15 ounces of silver to 1 ounce of gold was set in 1792. This ratio overvalued silver, so silver became the standard. In 1834, the ratio was altered to 16 to 1, which overvalued gold, so gold became the standard.

Gold. The great gold discoveries in California and Australia in the 1840s and 1850s produced a temporary decline in the value of gold in terms of silver. This price change plus the dominance of Britain in international finance led to a widespread shift from a silver standard to a gold standard. Germany adopted gold in 1871-73; the Latin Monetary Union (France, Italy, Belgium, Switzerland) in 1873-74; the Scandinavian Union (Denmark, Norway, and Sweden) and The Netherlands in 1875-76. By the final decades of the century, silver remained dominant only in the Far East (China, in particular). Elsewhere the gold standard reigned.

The early 20th century was the great era of the international gold standard. Gold coins circulated in most of the world; paper money, whether issued by private banks or by government, was convertible on demand into gold coins or gold bullion at an official price (with perhaps the addition of a small fee); and bank deposits were convertible into either gold coin or paper currency that was itself convertible into gold. In a few countries, a minor variant prevailed—the so-called gold-exchange standard, under which the currency was converted at a fixed price into the currency of another country (usually the British pound sterling) that was itself convertible into gold.

There was, in effect, a single world money called by different names in different countries. A U.S. dollar, for example, was defined as 23.22 grains of pure gold (25.8 grains of gold 0.9000 fineness). A British pound sterling was defined as 113.00 grains of pure gold (123.274 grains of gold 11/12th fine). Accordingly, one British pound equalled 4.8665 U.S. dollars (113.00/23.22) at the official parity. The actual exchange rate could deviate from this only by an amount that corresponded to the cost of shipping gold. If the price of the pound sterling in terms of dollars rose to a considerably higher value than this in the foreign exchange market, someone in New York City who had a debt to pay in London might find that, rather than buy the pounds he needed on the market, it was cheaper to get gold for his dollars at his bank or at the U.S. treasury, ship the gold to London, and get pounds for his gold from the Bank of England. This set an upper limit to the exchange rate. Similarly, the cost of shipping gold from Britain to the U.S. set a lower limit. These limits were known as the gold points.

Under such an international gold standard, the quantity of money in each country was determined by the specie-flow adjustment mechanism analyzed by 19th-century economists. If for whatever reason, the quantity of money in a country rose unduly, this would tend to raise prices in that country relative to prices in other countries, discouraging exports and encouraging imports. The decreased supply of foreign currency from the sale of exports plus the increased demand for foreign currency to pay for imports would tend to raise the price of foreign currency in terms of domestic currency. As soon as this price hit the upper gold point, gold would be shipped out of the country to other countries. The decline in the amount of gold would produce in turn a reduction in the total amount of money—because banks and government institutions, seeing their gold reserves decline, would want to protect themselves against further demands by reducing the claims against gold that were outstanding. This would tend to lower prices at home. The influx of gold abroad would have the opposite effect, increasing the quantity of money there and raising prices. These adjustments would continue until the gold flow ceased or was reversed.

This is precisely the mechanism that operates within a

unified currency area; the mechanism that determines how much money there is in Illinois compared to how much there is in other states or how much there is in Wales compared to how much there is in other parts of the United Kingdom. In the early 20th century, most of the world was a unified currency area so the gold standard functioned throughout the world. Its great advantage was that—if permitted to operate—it would greatly limit the power of any national government and prevent it from engaging in irresponsible monetary expansion. This was also its great disadvantage. In an era of big government and of full employment policies, a real gold standard would tie the hands of national governments in one of the most important areas of policy.

The decline of gold. World War I ended the real international gold standard. Most belligerents suspended the free convertibility of gold. The U.S., even after its entry into the war, maintained convertibility but embargoed gold exports. For a few years after the end of World War I, most nations had inconvertible national paper standards—inconvertible in the sense that paper money was not convertible into gold or silver. The exchange rate between any two currencies was a market rate that fluctuated from time to time. During this period this was regarded as a temporary phenomenon, like the British suspension of gold payments during the Napoleonic era, and the U.S. suspension during the Civil War greenback period. The great aim was a restoration of the prewar gold standard.

This aim dominated monetary developments during the 1920s. Britain, still a major financial power, returned to gold in 1925. Winston Churchill, then Chancellor of the Exchequer, decided to follow prevailing financial opinion and adopt the prewar parity (*i.e.*, to define a pound sterling once again as equal to 123.274 grains of gold 11/12th fine). This produced exchange rates that, at the existing prices in sterling, overvalued the pound and so tended to produce gold outflows, especially after France returned to gold in 1928 at a parity that undervalued the franc. By 1929 the important currencies of the world, and most of the less important ones, were again linked to gold.

The gold standard that was restored, however, was a far cry from the prewar gold standard. The establishment of the Federal Reserve System in the United States introduced an additional link in the international specie-flow mechanism. That mechanism no longer operated automatically. It operated only if the Federal Reserve chose to let it do so, and the Federal Reserve did not so choose; it took certain measures that prevented gold inflows from producing a corresponding expansion in the money supply. The United Kingdom had recurring difficulties in retaining its gold. It followed a restrictive monetary policy, but, because of rigidities in prices and particularly in wages, the result was unemployment rather than a lowering of prices. The unemployment reduced imports and stimulated exports, thus preventing gold losses. But this was not a tenable long-term position, as a lower level of prices might have been. Most other countries adopted a gold-exchange standard. Everywhere national central banks took scattered measures to loosen the connection between changes in the money supply and inflows or outflows of gold.

If the Great Depression had not occurred, this system might have grown and matured and improved. But the Great Depression brought the managed gold standards to a quick end. It originated in the United States, spread to all the countries linked to the U.S. by the gold exchange standard, and then reverberated back to the U.S. Britain was the first major country to cut the link, leaving the gold standard in 1931. The United States followed in March 1933.

The world's monetary system operated on a dollar standard from the end of World War II until 1971, when, in an attempt to control inflation, the United States unilaterally severed the connection between the dollar and gold. Under the dollar standard, the dollar was widely used in international trade, even in trade between countries other than the U.S. It was the unit in terms of which the exchange rates of other currencies were expressed. Other

Managed
gold-
exchange
standard

countries maintained their "official" exchange rates by buying and selling U.S. dollars and held dollars as their primary reserve currency for that purpose. The existence of a dollar standard did not mean that other countries could not change their exchange rates from time to time—as Germany and France did in 1969—just as the gold standard did not mean that countries could not "devalue" or "appreciate" in terms of gold. What it did mean was that the U.S. could not determine its own exchange rate or its balance of payments position. It also meant that U.S. monetary policy had a major effect on the world economy.

MODERN MONETARY SYSTEMS

Monetary systems are today very much alike in all the major countries of the world. They consist of three levels: (1) the holders of money (the "public")—individuals, businesses, governmental units; (2) commercial banks (privately or governmentally owned), which borrow from the public and make loans to individuals, firms, or governments; and (3) central banks, which have a monopoly on the issue of certain types of money, serve as the bankers for the central government and the commercial banks, and have the power to determine the quantity of money.

The public holds its money in two forms: (1) currency (including coin) and (2) bank deposits.

In most countries the bulk of the currency consists of notes issued by the central bank. In the United Kingdom these are Bank of England Notes, in the United States Federal Reserve Notes, and so on. It is hard to say precisely what "issued by the central bank" means. In the U.S., for example, the currency bears the words "Federal Reserve Note," but these notes are not obligations of the Federal Reserve Banks in any meaningful sense. The holder who presents them to a Federal Reserve Bank has no right to anything except other pieces of paper adding up to the same face value. The situation is much the same in most other countries.

The other major item of currency held by the public is coin. In almost all countries this is token coin, worth as metal much less than its face value.

Bank deposits. Bank deposits are also counted as part of the money holdings of the public. In the 19th century most economists regarded only currency and coin as "money," treating deposits only as claims to money. As deposits became more and more widely held, and as a larger fraction of transactions came to be effected by check, economists started to include not the checks, but the deposits they transferred, as money on a par with currency and coin.

The definition of money has been the subject of much dispute. The chief point at issue is which categories of bank deposits to call money and which to regard as near money. Many economists include as money only deposits transferable by check (demand deposits). Others include nonchecking deposits such as "time deposits" or "current deposits" in commercial banks. Still others include deposits in other financial institutions such as savings banks, savings and loan associations, and so on.

The term deposits is highly misleading. It connotes something deposited for safekeeping, like currency in a safe-deposit box. Bank deposits are not like that. When one brings currency to a bank for "deposit," the bank does not put the currency in a vault and keep it there. It may put a small fraction of the currency in the vaults as "reserves," but it will lend most of it to someone else or buy an investment—that is, a bond or some other security. As part of the inducement to depositors to lend it money, it provides facilities for transferring demand deposits from one person to another by check.

The deposits of commercial banks are assets of their holders but liabilities of the banks. The assets of the banks consist of "reserves"—currency plus deposits at other banks—and "earning assets"—loans plus investments in the form of bonds and other securities. The reserves are only a small fraction of the aggregate deposits. Initially, in the history of banking, the amount of reserves held was determined by each bank separately in terms of its judgment of the likely demands on it. The

growth of deposits enabled the total quantity of money (including deposits) to be larger than the total sum available to be held as reserves. A bank that received, say, \$100 in gold might add \$25 to its reserves and lend out \$75. But the recipient of the \$75 loan would himself spend it. Some of those who received gold this way would hold it as gold but others would deposit it in this bank or in other banks. If, for example, two-thirds was redeposited, some bank or banks would find \$50 added to deposits and to reserves and would repeat the process, adding \$12½ to its reserves and lending out \$37½. When this multiple expansion process worked itself out fully, total deposits would have increased by \$200, bank reserves by \$50, and \$50 of the initial \$100 deposited would have been retained as "currency outside banks." There would be \$150 more money in total than before (deposits up by \$200, currency outside banks down by \$50). Although no individual bank "created" money, the banking system as a whole did. This is the well-known multiple expansion process that lies at the heart of the modern monetary system.

Central banking. An important part of the monetary system is the central bank. The Bank of England was the first modern central bank, serving as the model for many others. It was established as a private bank in 1694 but quickly came to be largely an agency of the government. The Bank of France was established as a governmental institution by Napoleon in 1800. In the U.S., the 12 Federal Reserve Banks, which, together with the Board of Governors in Washington, D.C., constitute the Federal Reserve System, are technically owned by their member commercial banks, but this is a pure formality. Member banks get only a fixed annual percentage dividend on their stock and have essentially no formal power. To all intents and purposes, the system is a governmental agency and is best treated as such.

The notes issued by a central bank (or another governmental agency) plus deposits at the central bank are often called high-powered money, because when held as bank reserves each dollar or pound or franc may correspond to several dollars or pounds or francs of commercial bank deposits. Generally speaking, there is now no formal limit to the amount of notes and deposits that a central bank may have as liabilities.

The way in which a central bank increases or decreases the total amount of high-powered money is, typically, by making loans (discounting) or by buying and selling government securities (open-market operations). If, for example, the Federal Reserve System purchases \$1,000,000 of government securities, it will pay for these securities by a check on itself, adding \$1,000,000 to its assets and \$1,000,000 to its liabilities. The seller of the security can take the check to a Federal Reserve Bank, which will give him \$1,000,000 in Federal Reserve Notes. Or the seller may deposit the check at his bank, and the bank will in turn present it for payment to a Federal Reserve Bank which will "pay" the check by making a book entry increasing that bank's deposits with it by \$1,000,000. The bank may, in turn, transfer this sum to a borrower who again will either convert it into Federal Reserve Notes or deposit it.

The important point is that these bookkeeping operations simply record a process whereby the central bank has created, out of thin air as it were, additional high-powered money—the direct counterpart of printing Federal Reserve Notes. Similarly, if the central bank sells government securities, it destroys high-powered money.

In addition to the high-powered money of the central bank, the total quantity of money at any given time depends on the preferences of the public as to the relative amounts of money it wishes to hold as currency and as deposits and on the preferences of the banks as to the ratio they wish to maintain between their reserves and their deposits. (The reserve ratio is of course dominated by legal reserve requirements, where they exist, but may vary somewhat as banks think it prudent to keep a larger or smaller cushion in excess of required reserves.)

It follows that, by controlling the amount of high-powered money and by other less important means, a central

The money holdings of the public

High-powered money

bank can vary the total quantity of money as it wishes within broad limits. The major problem of modern monetary policy is how the central bank should use this power.

THE QUANTITY THEORY OF MONEY

The relation between money and what it will buy has always been a central issue of monetary theory. Economists have generally held that the level of prices is determined by the quantity of money. But precisely how the quantity of money affects the level of prices, and what the effects are of changes in the quantity of money, have been conceptualized in different ways at different times. For an interval of two or three decades from the mid-1930s to the mid-1960s there was a widespread rejection of the quantity theory by professional economists. More recently, there has been something of a counterrevolution involving a partial return to and modification of earlier views. The following discussion of monetary theory will therefore deal first with the quantity theory of money, as it developed before the 1930s, then with the Keynesian revolution, and finally with the recent counter-revolution.

In whatever way it has been formulated, the quantity theory of money has involved a distinction between the *nominal* quantity of money and the *real* quantity of money. The nominal quantity of money is that expressed in whatever units are used to designate money—talents, shekels, pounds, francs, lire, drachmas, dollars, yen, and so on. The real quantity of money is that expressed in terms of the volume of goods and services that the money will purchase. The quantity theory assumes that what ultimately matters to holders of money is the real quantity rather than the nominal quantity. If this is so, then whatever factors may determine the nominal quantity of money, it is the holders of money who determine the real quantity and, in the process, the price level.

The following may be considered a hypothetical example. In a certain community the quantity of money in existence is \$1,000,000, and the total income of the community is \$10,000,000 a year. On the average, each member of the community holds an amount of money equal in value to one-tenth of a year's income, or to 5.2 weeks' income. Put differently, the income velocity of circulation is equal to ten per year; that is, each \$1 on the average is paid out ten times a year. For the sake of simplicity there are no business enterprises; the members of the community buy and sell services from and to one another.

The quantity of money is somehow then doubled, but in such a way that no one expects the quantity to change again. Each member of the community will regard himself as better off. He now has 10.4 weeks' income in the form of cash, where as before he had only 5.2 weeks'. If everyone were to hold onto the extra cash, nothing further would happen. But people will try to spend it. One man's spending, however, is another man's receipts. All the people together cannot spend more than all the people receive. The attempt of each to do so is bound to be frustrated. In the attempt to spend more than they receive, people will simultaneously try to buy more of various services from each other and to sell less. To induce others to sell, they will offer higher prices; to induce others not to buy, they will ask higher prices. Whether the quantity sold goes up or down depends on whether the attempt to buy more is stronger or weaker than the attempt to sell less. But in either case total spending is sure to go up and so are total income and prices paid. When income has doubled, to \$20,000,000, the amount of money in existence will again be equal in value to 5.2 weeks' income. The community will have succeeded in reducing its real cash balances to their former level, not by reducing nominal balances but by raising incomes and prices. The process of adjustment may not be smooth; spending may go too far and leave people with real balances that are too small, requiring a subsequent fall in the price level; but the final position will tend toward a doubling of prices, and the previous real flows of services will be resumed with no one any better off than before the new money was distributed.

This simple example embodies most of the basic principle of monetary theory: (1) the central distinction between the *nominal* and the *real* quantity of money; (2) the equally crucial contrast between the alternatives open to the individual and to the community as a whole. To each individual separately (in the hypothetical example and in the real world) it looks as if his income is outside his control, but he can determine how much cash he holds. To the community as a whole, the total amount of cash is fixed but it is able to determine the size of its income in dollars; (3) the importance of attempts. The *attempt* of people as a whole to spend more than they receive, even though doomed to frustration, has the effect of raising total nominal expenditures and receipts.

The quantity equations. A useful device for clarifying the variables stressed in the quantity theory is the so-called quantity equation. The quantity equation has taken different forms according as quantity theorists have stressed different variables. The most famous is the so-called transactions version:

$$MV = PT \quad (1)$$

This version starts with the identity that any transaction has two sides: an amount of money paid and a corresponding quantity transferred at a certain price—for example, \$10 paid for two books at \$5 each. The left side of the equation sums up the amount of money paid out; the right side, the value of the transaction. Generalized to the whole economy, the left side of the equation becomes the amount of money in existence (M) multiplied by the average number of times per year (or other unit of time) that each dollar is used in effecting a transaction—the transaction velocity of circulation (V). The right side of the equation then becomes the product of an average price (P) times an *aggregate* quantity of goods (T).

In this version, all transactions of whatever kind are included—purchases of securities along with purchases of restaurant meals, purchases of the food ingredients by the restaurant as well as of the final restaurant meals. The inclusion of capital as well as current transactions, and of intermediate as well as final goods, makes the concepts of total transactions (T) and the "general price level" (P) highly ambiguous and difficult to handle statistically. The emergence of national income accounting in recent decades has led to the substitution of an income version of the quantity equation:

$$MV = Py \quad (2)$$

In this equation y represents national income in constant prices (the total value at fixed prices of all final goods and services including additions to the stock of capital), P is a price index, and V is the average number of times that the money stock is used for making *income* transactions (that is, payments for final goods and services, or alternately, for final productive services—services of labour, land, and so forth).

In both these equations the two sides are, by definition, precisely equal to one another—that is, each equation is an identity (like the equality of total assets and total liabilities on a double-entry balance sheet). In practice, the data on transactions or on income—the right sides of the equations—come from different statistical sources than do the data on the quantity of money, and only indirect data exist for velocity. As a consequence, when these equations are used to describe the real world, V is usually computed in such a way as to make the two sides equal, thus embodying all the statistical errors of the other terms.

These versions of the quantity equation emphasize the function of money as a medium of exchange—its use in making payments. But money also serves as a temporary store of purchasing power in the interim between sale and purchase. This aspect of money is emphasized in the cash balance approach.

It has generally been supposed that the amount of money people will want to hold for this purpose bears some relation to their income. This leads to the equation

$$M = kPy \quad (3)$$

in which M , P , and y are defined as in equation (2), and k is the ratio of money stock to income. Although equation (3) is simply a mathematical transformation of equation (2)— k being numerically equal to the reciprocal of V —it brings out the difference between the aspects of money stressed by the transactions approach and those stressed by the cash-balances approach.

In particular, the cash-balances approach fits in better with general economic analysis than does the transactions approach. Equation (3) can be regarded as describing the demand for money, with P and y being two of the variables on which the demand for money depends and with k symbolizing all the other variables. For completeness, the analysis requires another equation showing how the supply of money is determined. This approach provides a better bridge to the later Keynesian and more recent monetarist development than does the transactions approach.

Their uses. The purpose of the quantity equations is mainly to provide an analytical filing system to help sort out the forces at work. Their usefulness derives from the empirical hypothesis that each of the four main labels (M , V , P , and y for the income version) refers to a fairly distinct set of forces subject to influences that are different from those classified under another label.

Interpreta-
tion of
the
quantity
equations

In its simplest form, the quantity theory regards output (y) as being determined by the productive opportunities of the community and its tastes and preferences; it regards the quantity of money (M) as being determined by the conditions of production of the monetary metal plus the characteristics of the financial and banking structure (for a commodity standard) or the decisions of the monetary authorities and the financial structure (for a fiat standard); it regards velocity (V) as being determined by payments practices, the financial and economic arrangements for effecting transactions, and the costs and returns from holding money instead of other assets; and, finally, it regards the price level (P) as the variable that adjusts to reconcile the conditions of production determining y with the financial conditions determining M and V .

In the most rigid form of the quantity theory, velocity is seen as very stable. This view regards the level of prices as determined directly by changes in the quantity of money, and as moving in strict proportion to the quantity of money. But the more sophisticated quantity theorists never took this simplistic view. They all recognized that prices could not adjust instantaneously and fully and that, during so-called transition periods, changes in the quantity of money would affect output as well as prices. They also recognized that V was not a constant but itself a function of other variables such as interest rates and that it was subject to substantial random perturbations. As a result, they all recognized that changes in output and prices could be produced in principle by independent changes in either V (that is, the demand for money) or M (that is, the supply of money).

On an analytical level the quantity theory of money is not the tautology of the equation; it is, rather, an analysis of the factors determining the quantity of money that the community wishes to hold. On an empirical level, it does not assume that V is constant; it holds that changes in the demand for money tend to proceed slowly and gradually or to be the result of events set in train by prior changes in supply, whereas, in contrast, substantial changes in the supply of nominal balances can and frequently do occur independently of any changes in demand. The conclusion is that substantial changes in prices or nominal income are almost invariably the result of changes in the nominal supply of money rather than of V .

An implication of the foregoing is that monetary policy—policy as to changes in the quantity of money—is the appropriate means for preventing inflation or deflation and for avoiding wide cyclical fluctuations.

The Keynesian critique. The groundwork for the Keynesian attack on the quantity theory was laid by two historical experiences. One was the British experience after the return of gold in 1925. In order to maintain the parity set for the pound in terms of gold, the Bank of England followed a persistently tight monetary policy. But prices did not move downward sufficiently, and there

was persistent unemployment. This raised doubts about the allegedly classical postulate that money was only a veil, that total output was determined by real conditions, and that full employment was the "equilibrium" or normal position. The second, and even more dramatic experience, was the Great Depression. Later study has shown that the severity of the depression, certainly in the U.S., can be attributed to bad monetary policy—a policy that permitted or forced the quantity of money to decline by one-third from 1929 to 1933. This was not known or understood at the time; on the contrary, the Federal Reserve authorities insisted that they were doing everything they could to offset the forces making for depression, and that they were unable to do more.

This stimulated the British economist John Maynard Keynes—who had been a highly sophisticated quantity theorist on strictly classical lines—to develop an alternative interpretation of the debacle after 1929 and an alternative prescription for policy. It also produced a sympathetic climate for his new theory, so that the Keynesian revolution swept the economics profession in a remarkably short time.

Keynes did not, of course, deny the validity of the quantity equation. What he maintained was very different: that the right-hand side— Py or prices times output—was determined by forces largely independent of the left-hand side. P , he argued, was largely an institutional datum, linked to customary nominal rates of wages that were very resistant to change, or at least to decline. Real income or output, y , he argued, was determined by aggregate demand, which depended primarily on the amount of "autonomous spending"—that is, spending not linked directly to current income—and consisted mostly of investment expenditures by enterprises and spending by government. The rest of aggregate demand consisted mostly of consumption, which was linked closely to current income and so determined by autonomous spending. On this view, the key factor determining the level of real income and output, and thereby the level of nominal income, was the strength of investment and of government spending.

How then could the quantity equation hold? Keynes's answer was that V was so pliable that it would adjust to keep the two sides equal. Let autonomous spending increase without a change in the quantity of money and V would simply increase in response; let the quantity of money increase without an increase in autonomous spending, and V would decline to offset the increase in M .

In its extreme form—as much a caricature of Keynes's thinking as the attribution of a constant V is of his predecessors—the quantity of money simply did not matter at all for the course of prices or real output but only for the movement of V .

How did Keynes explain the plasticity of V ? He did so by means of a very special explanation of the demand for money, to which he applied the phrase "liquidity preference." He regarded the quantity of money demanded as divided into two parts, one part M_1 , "held to satisfy the transactions and precautionary motives," the other, M_2 , "held to satisfy the speculative motive." He regarded M_1 as a roughly constant fraction of income, and with respect to this part he accepted a rather rigid form of the quantity theory. He regarded M_2 , however, as largely independent of income and as highly sensitive to current interest rates and to the expectations of future interest rates. This explained the plasticity of V .

According to Keynes, if current interest rates are above the level many holders of money expect to prevail in the future, people will prefer to hold their speculative balances in bonds instead of money—because they expect a fall in interest rates, which means a rise in bond prices. Conversely, if current interest rates are below the level expected to prevail in the future, they will prefer to hold money. Over short periods, he argued, these expectations are widely and strongly held at about the same level. In the extreme with everyone holding the same expectations and everyone sensitive, liquidity preference will become, as he termed it, absolute. Under such circumstances, let the monetary authorities try to in-

crease the amount of money by buying bonds. This will tend to raise bond prices and lower interest rates, but even the slightest lowering will lead speculators to absorb the additional money and sell bonds. The result will be a lower V or a higher k for the community as a whole. The converse will hold if the authorities try to reduce the amount of money.

Alternatively, if nominal income rises, for whatever reason, without a change in the quantity of money, that will require an increase in M_1 , but it can and will come out of M_2 without any further effects. The conclusion is that under circumstances of absolute liquidity preference income can change without a change in M or in interest rates, and M can change without a change in income or in interest rates. The holders of money are in metastable equilibrium, like a tumbler on its side on a flat surface; they will be satisfied with whatever the amount of money happens to be.

For the long run, Keynes regarded the size of M_2 as depending on the level of interest rates for a different reason. The interest rate measures the cost of holding money instead of bonds—it is the price, as Keynes put it, that the holder of money pays for parting with liquidity. If the interest rate is low, the cost of liquidity is low; hence people will hold a large fraction of their wealth in the form of money, and the fraction will be sensitive to small changes in the interest rate—liquidity preference being absolute in the long run as well as in the short run. If interest rates were high, and M_2 low—a condition that Keynes expected to hold only at times of full employment—then the quantity theory would “come into its own,” in the double sense that velocity would be constant and that prices rather than output would respond to changes in the quantity of money.

Keynes himself regarded absolute liquidity preference as a strictly “limiting case”; while it “might become practically important in future,” he knew “of no example . . . hitherto.” In practice, however, he treated velocity as if its behaviour frequently approximated this limiting case, and his disciples went much further than he did.

If liquidity preference was not absolute, then in the Keynesian view a change in the quantity of money would first affect interest rates in order to induce the community to hold the changed quantity of money. This change in interest rates might in turn affect autonomous spending—a decline encouraging investment and a rise discouraging investment—and in this way aggregate demand, income and employment. The more sensitive is the quantity of money demanded to interest rates, and the less sensitive is investment to interest rates, the smaller will be the final effect of changes in the quantity of money, and conversely. (For a fuller discussion of the Keynesian view see INCOME AND EMPLOYMENT THEORY.)

The monetarist view. The Keynesian revolution swept the economics profession in the late 1930s and early 1940s; by the 1960s Keynesian ideas had become deeply embedded in the thinking of informed intellectuals. The course of events, however, did not follow the pattern that many had expected. Their analysis had predicted a great postwar depression if war spending was not replaced by other government spending. But government spending fell precipitously in the U.S. and elsewhere without ill effect. The analysis of the Keynesians had called for “cheap money” policies—that is, low interest rates—with a view to stimulating investment and thereby avoiding mass unemployment. Those policies proved in the main to be unnecessary; where they were adopted they were consistently followed by inflation that could be restrained only by abandoning the cheap-money policies. A re-examination of the Great Depression of the 1930s demonstrated that, contrary to general belief, it had been a tragic testament to the great power of monetary policy, not to its impotence. The U.S. Federal Reserve System could have prevented the decline of one-third in the quantity of money that occurred from 1929 to 1933. Had it done so, the evidence indicates, the depression would have been far milder and briefer. Most important of all, extensive empirical research demonstrated that the velocity of circulation of money, far from moving to offset

changes in the quantity of money, has generally moved in the same direction and reinforced the effect of these changes.

The result has been a major change in the views of today's followers of Keynes. They attribute far more importance to the quantity of money than they earlier did, regarding the quantity of money demanded as less elastic with respect to interest rates, and investment as more elastic, than they did in the first flush of enthusiasm. Some economists have been waging a counter-revolution in the name of monetary policy, to which the name monetarism has become attached. This doctrine is in an early stage of development and was still, at the beginning of the 1970s, a minority view among professional economists. It had made significant gains, however, and had influenced considerably the views even of those who still regarded themselves as Keynesians.

No counterrevolution ever produces a return to the status quo. The emerging monetarist doctrine has much in common with the earlier quantity theory, but it has not expunged the Keynesian revolution. As one monetarist has put it, Keynes's liquidity preference analysis reinforced the shift of emphasis that had already been going on “from the transactions version of the quantity equation to the cash-balances version—a shift of emphasis from mechanical aspects of the payments process to the qualities of money as an asset.” His analysis, though strictly in the cash-balances tradition, was much more explicit in stressing the role of money as one among many assets, and of interest rates as the relevant cost of holding money. The recent work of others “has gone still further in this direction treating the demand for money as . . . concerned with the composition of the balance sheet or portfolio of assets.” (Milton Friedman, “A Theoretical Framework for Monetary Analysis,” *Journal of Political Economy*, March/April 1970.) The Keynesian emphasis on the plasticity of velocity has led to much more extensive work on the stability of the demand for money, and in particular on the exploration of time lags between monetary changes and economic changes and on the separate effects of monetary changes on prices, output, and interest rates.

Key propositions. For the long run, however, monetarism accepts almost wholly the earlier quantity theory. Its main contribution to the earlier theory is a much more detailed and sophisticated analysis of short-run effects, and a more detailed set of empirical generalizations about these effects. The key propositions of monetarism are as follows:

1. The rate of growth of the quantity of money is consistently, though not precisely, related to the rate of growth of nominal income. That is, if the quantity of money grows rapidly, so will nominal income, and conversely. The velocity of circulation, though not constant, is fairly predictable.
2. This relation is not obvious to the naked eye, mainly because it takes time for changes in monetary growth to affect income.
3. On the average, a change in the rate of monetary growth produces a change in the rate of growth of nominal income six to nine months later. But this is an average.
4. If the rate of monetary growth is reduced, then about six to nine months later the rate of growth of nominal income and also of physical output will decline, but the rate of price rise will be affected very little. There will be downward pressure on prices only as a gap emerges between actual and potential output.
5. The effect on prices comes on the average, six to nine months after the effect on nominal income and output, so that the total delay between a change in monetary growth and a change in the rate of inflation averages about 12 to 18 months.
6. The above relationships are not invariable. There is many a slip between the monetary change and the income change.
7. Monetary changes affect output only in the short run—though “short run” may mean five to ten years. Over the longer run the earlier quantity theory seems to hold, and the rate of monetary growth affects only prices. What

The time factor in monetary policy

happens to output in the long run depends on such "real" factors as the enterprise, ingenuity, and industry of the people; the extent of thrift; the structure of industry and government; the relations among nations; and so on.

8. It follows from these propositions that *inflation is always and everywhere a monetary phenomenon*, in the sense that it cannot occur without a more rapid increase in the quantity of money than in output. There are, of course, many possible reasons for monetary growth—gold discoveries, the manner in which government spending is financed, and even the manner in which private spending is financed.

9. Government spending may or may not be inflationary. It will clearly be inflationary if it is financed by creating money—that is, by printing currency or creating bank deposits—and if the resultant rate of monetary growth exceeds the rate of growth of output. If it is financed by taxes or by borrowing from the public, the main effect is that the government spends the funds instead of someone else. Government fiscal policy is extremely important in determining the fraction of total income that is spent by the government and who bears the burden of that expenditure. But it is not necessarily inflationary.

10. One of the most difficult things to explain in simple fashion is the way in which a change in the quantity of money affects income. Generally, the initial effect is not on income at all but on the prices of existing assets (bonds, equities, houses, and other physical capital). This is the liquidity effect stressed by Keynes; it occurs on the balance sheet, not on the income account. An increased rate of monetary growth raises the amount of cash people (or businesses) have relative to other assets. The holders of the excess cash will try to correct this imbalance by buying other assets. But one man's spending is another man's receipts. All the people together cannot change the amount of cash all hold—only the monetary authorities can do that. However, their attempts will tend to raise the prices of assets and to reduce interest rates. These changes will in turn encourage spending (by businessmen and others) to produce new assets. That is how the initial effect on balance sheets gets translated into an effect on income and spending. In this connection the monetarists stress a far wider range of assets and interest rates than do the Keynesians; they give importance to such assets as durable consumer goods and other real property; they regard market interest rates as only a small part of the whole complex of rates that are relevant.

11. One important feature of this mechanism is that a change in monetary growth affects interest rates in one direction at the outset, and in the opposite direction later on. More rapid monetary growth at first tends to lower interest rates. But later on, as it raises spending and stimulates price inflation, it also produces a rise in the demand for loans that will tend to raise interest rates. That is why, around the world, interest rates are highest in the countries that have had the most rapid rise in the quantity of money and also in prices—countries like Brazil, Chile, and Korea in the 1960s. Taking the opposite case, a slower rate of monetary growth at first raises interest rates but later on, as it reduces spending and price inflation, it lowers interest rates. That is why interest rates are lowest in countries that have had the slowest increase in the quantity of money and in prices—countries like Switzerland and Germany in the 1960s. This inconsistent relation between the quantity of money and interest rates explains why monetarists insist that interest rates are not a good guide to monetary policy.

12. With respect to policy, these propositions clearly imply that monetary policy is important and that what is important about monetary policy is its effect on the quantity of money, not on bank credit or total credit or interest rates. Wide swings in the rate of change of the quantity of money are evidently destabilizing and should be avoided. Beyond this, different monetarists draw different conclusions. Some conclude that the monetary authorities should make deliberate changes in the rate of monetary growth in order to offset other forces making for instability; these changes should be gradual and small

and make allowance for the lags involved. Others maintain that not enough is known about the relations between changes in the quantity of money and in prices and output to assure that a discretionary monetary policy will do good rather than harm. They believe that a wiser policy would be simply to have the quantity of money grow at a steady rate over time. They contend that this would provide a stable monetary framework for economic growth without itself being a source of instability and disturbance.

Conclusion. No other subject in economics has been studied longer or more intensively than the subject of money. The result is a vast amount of documented experience and a well-developed body of theoretical analysis. The extent to which the students of monetary problems agree in their basic conclusions is concealed by the tendency of laymen to exaggerate their differences. But even among professional economists there remain important disagreements, centering mainly on empirical judgments about the stability and form of some of the relations between money and other economic magnitudes.

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(M.Fr.)

Money Market

Every country with a monetary system of its own has to have some kind of market in which dealers in bills, notes, and other forms of short-term credit can buy and sell. The "money market" is a set of institutions or arrangements for handling what might be called wholesale transactions in money and short-term credit. The need for such facilities arises in much the same way that a similar need does in connection with the distribution of any of the products of a diversified economy to their final users at the retail level. If the retailer is to provide reasonably adequate service to his customers, he must have active contacts with others who specialize in making or handling bulk quantities of whatever is his stock-in-trade. The money market is made up of specialized facilities of exactly this kind. It exists for the purpose of improving the ability of the retailers of financial services—commercial banks, savings institutions, investment houses, lending agencies, and even governments—to do their job. It has little if any contact with the individuals or firms who maintain accounts with these various retailers or purchase their securities or borrow from them.

The elemental functions of a money market must be performed in any kind of modern economy, even one that is largely planned or socialist, but the arrangements in socialist countries do not ordinarily take the form of a market. Money markets exist in countries that use market processes rather than planned allocations to distribute most of their primary resources among alternative uses. The general distinguishing feature of a money market is that it relies upon open competition among those who are bulk suppliers of funds at any particular time and among those seeking bulk funds, to work out the best practicable distribution of the existing total volume of such funds.

In their market transactions, those with bulk supplies of

The function of a money market

McGroarty/Dooley
August 31, 1989
10:30 a.m.
[TREASURY]

PRESIDENTIAL REMARKS: DEPARTMENT OF THE TREASURY BICENTENNIAL
EAST DRIVEWAY
SEPTEMBER 11, 1989
2:20 P.M.

Thank you. [Acknowledgements.] Secretary Nick Brady, who is doing such a fine job at the helm here at Treasury. The dedicated staff of the Treasury Department. And I also want to acknowledge the all-star assemblage of past Secretaries of the Treasury here today. [Invitees who may attend: Douglas Dillon, Henry Fowler, Joseph Barr, David Kennedy, John Connally, William Simon, William Miller, Donald Regan, James Baker.] Men whose talents are testimony to the high tradition of public service that has been a hallmark at Treasury for 200 years.

Cheryl
Citizen
Treasury
Pub Affs
Sub 525

I want to thank you for inviting a neighbor to your celebrations. I know it's not easy being next door to a house that gets about 5,000 visitors a day. Fortunately for us, Treasury's 200th birthday fell on a Monday, so we've got the driveway to ourselves. [[Pause]] Of course, I did have to promise Barbara I wouldn't ask all of you over to the house for a quick tour.

WFF Visitors
Bureau

I understand that the Treasury Department wanted to celebrate its 200th anniversary the way Malcolm Forbes celebrated

his 70th -- but unfortunately, Treasury doesn't have as much money as Malcolm does. [[Pause]]

Some of the greatest American statesmen were involved in Treasury's beginnings. It was Thomas Jefferson who invented the American monetary system. True, there have been others who invented money -- but they're in prison. [[Pause]]

*Encyclopedia
Americana
Vol. 7
pp 205*

Legend has it that Andrew Jackson ordered the Treasury built on this site, despite the fact that it blocked the view of the Capitol. Now, I've heard some folks down on the other end of Pennsylvania Avenue say that I can't see past the Treasury -- and I want you to know I don't think there's anything wrong with that. [[Pause]]

But it is handy to have Treasury for a neighbor. You never know when you might need to pop next door [to the Cash Room] and borrow a cup of money.

I am honored to join you in celebrating this day, 200 years since the first Treasury Secretary, Alexander Hamilton, took the oath of office -- with so many of the dedicated public servants who have carried on, and who carry on today, Hamilton's tradition.

We all know the Treasury is one of the original four departments established by the First Congress. What isn't as well known is that in its long history, Treasury has been in some ways the birthplace of the federal bureaucracy. The U.S. Postal Service, the Public Health Service -- now the cornerstone of HHS -- the Coast Guard, the Departments of Interior, Commerce and Labor, the President's own budget office, the OMB: all were once part of Treasury's domain.

Even with these spin-offs, there is more than enough remaining in Treasury's portfolio. Treasury has grown -- from the original six officers authorized in 1789 to ^{150,000}~~160,000~~ employees today. And the work you do here has national -- and international -- implications.

From public finance to law enforcement to the challenge of Third World debt, Treasury is at the center of public debate. Sustaining our long-running economic expansion, restructuring our Savings and Loans, putting the Brady plan to work in the developing world: Many of the challenges our nation and the world will face in the decade ahead will be the challenges you face each working day at Treasury. I know that everyone from Nick Brady on down is tackling those challenges with energy and ingenuity.

It has been my privilege today to join you in this celebration. You can all be proud of the long, illustrious history of your institution -- and the new chapter you are writing here at Treasury today.

God bless you, and God bless the United States of America.

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